```
=> d his

     (FILE 'HOME' ENTERED AT 19:55:17 ON 22 JUN 2004)

     FILE 'CAPLUS' ENTERED AT 19:55:29 ON 22 JUN 2004
L1            32 S HEINDL D?/AU
L2           141 S SANGER G?/AU
L3            12 S MAERZ H?/AU
L4           304 S VON DER ELTZ?/AU
L5           483 S L1-4
L6            28 S L5 AND NUCLEIC
L7            13 S L6 AND LABEL?
L8             2 S L7 AND REAGENT/TI
                 SELECT RN L8 1

     FILE 'REGISTRY' ENTERED AT 20:01:42 ON 22 JUN 2004
L9            19 S E1-19

     FILE 'CAPLUS' ENTERED AT 20:04:22 ON 22 JUN 2004
L10            2 S L8 AND L9

     FILE 'STNGUIDE' ENTERED AT 20:06:27 ON 22 JUN 2004

     FILE 'CAPLUS' ENTERED AT 20:10:35 ON 22 JUN 2004

     FILE 'REGISTRY' ENTERED AT 20:10:42 ON 22 JUN 2004
L11            3 S L9 AND NR>6

     FILE 'HCAPLUS' ENTERED AT 20:12:27 ON 22 JUN 2004
L12            1 S L11

     FILE 'STNGUIDE' ENTERED AT 20:14:07 ON 22 JUN 2004

     FILE 'LREGISTRY' ENTERED AT 20:18:58 ON 22 JUN 2004
L13              STR

     FILE 'REGISTRY' ENTERED AT 20:23:33 ON 22 JUN 2004
L14            7 S L13
L15       279378 S (N AND O AND H AND C)/ELS AND 4/ELC.SUB NOT (RSD/FA OR PMS/CI
L16            2 S L15 AND L9
L17            7 S L13 SSS SAM SUB=L15
L18              STR L13
L19            6 S L18
L20            5 S L18 SSS SAM SUB=L15
L21         1599 S L18 SSS FUL SUB=L15
                 SAVE  L21 HEI411P/A
                 SAVE L9 HEI411I/A
L22            1 S L21 AND L9
L23      5031525 S (N AND O AND H AND C)/ELS AND 4/ELC.SUB AND RSD/FA NOT PMS/CI
L24            5 S L18 SSS SAM SUB=L23
L25        12003 S 7938.12.8/RID
L26            1 S L18 SSS SAM SUB=L25
L27           16 S L18 SSS FUL SUB=L25
                 SAVE L27 HEI411P2/A
L28            0 S L27 AND L9

     FILE 'CAPLUS' ENTERED AT 20:33:00 ON 22 JUN 2004
L29            7 S L27
L30         3185 S TRIFUNCTIONAL?
L31           55 S L30 AND FLUORESC?
L32            0 S L31 AND LABLE?
L33            9 S L31 AND LABEL?
L34            6 S L33 AND PY<2002
L35         1119 S L16
L36           23 S L35 AND FLUORESC?
L37           10 S L36 AND (DNA OR NUCLEIC OR LABEL?)
L38            0 S L35 AND L30
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L39         5744 S SOLID PHASE SYNTHESIS/CT
L40            6 S L39 AND L35
L41         5789 S L21
L42           13 S L41 AND L39
L43            1 S L42 AND FLUORE?
L44            1 S L42 AND LABEL?
L45           70 S L41(L)FLUOR?
L46            6 S L45 AND LABEL?

=> d que l29
L18             STR
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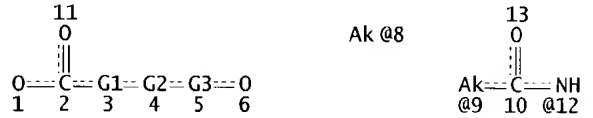


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VAR G1=8/9-2 12-4
VAR G2=N/CH
REP G3=(1-20) CH2
NODE ATTRIBUTES:
CONNECT IS E2  RC AT   8
CONNECT IS E2  RC AT   9
DEFAULT MLEVEL IS ATOM
GGCAT   IS LIN  SAT  AT   8
GGCAT   IS LIN  SAT  AT   9
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  12

STEREO ATTRIBUTES: NONE
L25        12003 SEA FILE=REGISTRY ABB=ON  PLU=ON  7938.12.8/RID
L27           16 SEA FILE=REGISTRY SUB=L25 SSS FUL L18
L29            7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L27


=> d que l35
L9             19 SEA FILE=REGISTRY ABB=ON  PLU=ON  (108-55-4/BI OR 150-25-4/BI
                  OR 154928-39-9/BI OR 154928-40-2/BI OR 154928-41-3/BI OR
                  2321-07-5/BI OR 321858-92-8/BI OR 3282-30-2/BI OR 3318-08-9/BI
                  OR 403656-56-4/BI OR 403656-57-5/BI OR 403656-58-6/BI OR
                  403656-59-7/BI OR 403656-60-0/BI OR 403656-61-1/BI OR 403656-62
                  -2/BI OR 40615-36-9/BI OR 534-03-2/BI OR 82911-69-1/BI)
L15        279378 SEA FILE=REGISTRY ABB=ON  PLU=ON  (N AND O AND H AND C)/ELS
                  AND 4/ELC.SUB NOT (RSD/FA OR PMS/CI)
L16             2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L15 AND L9
L35          1119 SEA FILE=CAPLUS ABB=ON  PLU=ON  L16


=> d que l41
L15        279378 SEA FILE=REGISTRY ABB=ON  PLU=ON  (N AND O AND H AND C)/ELS
                  AND 4/ELC.SUB NOT (RSD/FA OR PMS/CI)
L18             STR
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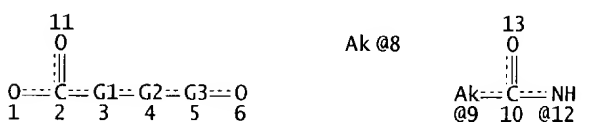



```
VAR G1=8/9-2 12-4
VAR G2=N/CH
REP G3=(1-20) CH2
NODE ATTRIBUTES:
```

```
CONNECT IS E2  RC AT   8
CONNECT IS E2  RC AT   9
DEFAULT MLEVEL IS ATOM
GGCAT   IS LIN  SAT  AT   8
GGCAT   IS LIN  SAT  AT   9
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  12

STEREO ATTRIBUTES: NONE
L21         1599 SEA FILE=REGISTRY SUB=L15 SSS FUL L18
L41         5789 SEA FILE=CAPLUS ABB=ON  PLU=ON  L21
```

```
=> d que
L30        3185 SEA FILE=CAPLUS ABB=ON  PLU=ON  TRIFUNCTIONAL?
L31          55 SEA FILE=CAPLUS ABB=ON  PLU=ON  L30 AND FLUORESC?
L33           9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L31 AND LABEL?
L34           6 SEA FILE=CAPLUS ABB=ON  PLU=ON  L33 AND PY<2002


=> d ibib abs ind 1-6

L34  ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        1996:228825  CAPLUS
DOCUMENT NUMBER:         124:263141
TITLE:                   Rotational Dynamics of Naphthalene-Labeled
                         Cross-link Junctions in Poly(dimethylsiloxane)
                         Elastomers
AUTHOR(S):               Leezenberg, Pieter B.; Marcus, A. H.; Frank, Curtis
                         W.; Fayer, M. D.
CORPORATE SOURCE:        Department of Materials Science and Engineering,
                         Stanford University, Stanford, CA, 94305-5025, USA
SOURCE:                  Journal of Physical Chemistry (1996),
                         100(18), 7646-55
                         CODEN: JPCHAX; ISSN: 0022-3654
PUBLISHER:               American Chemical Society
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   A series of end-linked poly(dimethylsiloxane) (PDMS) networks were prepd.
     with different crosslink functionalities and mol. wts.  This was achieved
     by simultaneous end-linking and self-condensation of a
     trifunctional silane crosslink precursor.  These networks had a
     nonpolar naphthalene chromophore covalently attached to a fraction of the
     crosslink junctions.  The time-dependent reorientation of the naphthalene
     is probed, inferring reorientation of the crosslinks, by detg. the
     time-dependence of the fluorescence depolarization in the
     picosecond time domain.  A 2-step relaxation model describes the
     orientational dynamics.  Fast, partial depolarization in a restricted
     geometry is superimposed on a slower relaxation that completely
     depolarizes the fluorescence.  The 2 rotational diffusion
     consts. are detd. at temps. varying from 235 to 298 K, while network
     parameters, such as crosslink d., mol. wt., and macroscopic strain, are
     varied.  These diffusion consts. have an Arrhenius activation energy of
     11.4 .+-. 0.8 kJ/mol.  The fast relaxation is driven by motions of a few
     chain segments; this process is dominated by the d. of the network polymer
     around the labeled crosslinks.  The slower, complete
     reorientation is driven by cooperative motions of a larger no. of chain
     segments connected to the crosslink that are insensitive to steric
     constraints in the immediate vicinity of the crosslinks.
CC   39-12 (Synthetic Elastomers and Natural Rubber)
ST   rotational dynamics crosslink junction silicone rubber
IT   Crosslinking
     Diffusion
        (rotational dynamics of naphthalene-labeled cross-link
        junctions in poly(dimethylsiloxane) elastomers)
IT   Rubber, silicone, properties
     RL: PEP (Physical, engineering or chemical process); PRP (Properties);
     PROC (Process)
        (rotational dynamics of naphthalene-labeled cross-link
        junctions in poly(dimethylsiloxane) elastomers)
IT   Chains, chemical
        (segmental motion; rotational dynamics of naphthalene-labeled
        cross-link junctions in poly(dimethylsiloxane) elastomers)

L34  ANSWER 2 OF 6  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        1995:390439  CAPLUS
DOCUMENT NUMBER:         122:315069
TITLE:                   A facile method to prepare C-terminal
                         fluorescently labeled peptides by an
                         Fmoc strategy
```

AUTHOR(S): Pennington, Michael W.; Baur, Pius
CORPORATE SOURCE: Bachem Bioscience, King of Prussia, PA, 19406, USA
SOURCE: Letters in Peptide Science (**1994**), 1(3), 143-8
CODEN: LPSCEM; ISSN: 0929-5666
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Spectrophotometric peptide probes, derivatized at the C-terminus, are conveniently prepd. by means of an 9-fluorenylmethoxycarbonyl (Fmoc) solid-phase strategy. Using a resin such as Sasrin, the fully protected peptide can be cleaved from the resin with hydrazine, yielding the protected peptide-hydrazide which is subsequently oxidized to the azide. An amino-contg. chromophore or fluorophore such as 5-[(2'-aminoethyl)amino]naphthalenesulfonic acid (EDANS) can be coupled directly to this activated carboxyl group. This allows for specific placement of the fluorophore at the C-terminal carboxyl group in the presence of **trifunctional** amino acids.

CC 34-3 (Amino Acids, Peptides, and Proteins)
ST C terminal **fluorescent** peptide
IT Peptides, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(C-terminal **fluorescent labeled**; prepn. of C-terminal **fluorescently labeled** peptides)
IT 6268-49-1 100900-07-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of C-terminal **fluorescently labeled** peptides)
IT 163265-38-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of C-terminal **fluorescently labeled** peptides)

L34 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:527679 CAPLUS
DOCUMENT NUMBER: 117:127679
TITLE: Continuous flow immunoassay: use of a novel **trifunctional** carrier molecule for the synthesis of fluorophore-**labeled** antigens
AUTHOR(S): Bredehorst, Reinhard; Wemhoff, Gregory A.; Kusterbeck, Anne W.; Charles, Paul T.; Ligler, Frances S.; Vogel, Carl Wilhelm
CORPORATE SOURCE: Dep. Biochem. Mol. Biol., Georgetown Univ., Washington, DC, 20007, USA
SOURCE: GBF Monographs (**1992**), 17(Biosens.: Fundam., Technol. Appl.), 453-60
CODEN: GBMOEB; ISSN: 0930-4320
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A **fluorescent** immunosensor operating in continuous flow and capable of detecting low-mol.-wt. antigens was developed. The approach differs from previously described continuous flow assays by not requiring incubation steps or the introduction of reagents following the loading of the sample into the system. Detection of the antigen is rapid, occurring within 3 min in the system described. The assay is based on the binding of **labeled** antigen to an immobilized antibody, with subsequent displacement of the **labeled** antigen when antigen is present in the buffer flow. To increase the sensitivity of the assay, the authors developed a novel **trifunctional** carrier mol. for the **fluorescent labeling** of the antigen. The backbone of the carrier consists of the 21 amino acid residues of the insulin A-chain, which provides a single site (terminal amino group) for covalent coupling of the antigen, 3 carboxyl groups for the attachment of fluorophores, and 4 sulfhydryl groups for derivatization with hydrophilic residues to compensate for the hydrophobic effect on the fluorophores. In this study, the model antigen 2,4-dinitrophenol (DNP) was coupled to the terminal amino group, the sulfhydryl groups were oxidized to S-sulfonates, and the carboxyl groups were derivatized with **fluorescein** using

carbohydrazide as spacer. The properties of the DNP-insulin A-chain-**fluorescein** conjugate (DNP-Ins-Fl) were compared to those of a DNP deriv. **labeled** with a single **fluorescein** residue via a small lysine spacer (DNP-Lys-Fl). At equimolar concns. the DNP-Ins-Fl generated a 2.6-fold higher **fluorescent** signal than the DNP-Lys-Fl, and exhibited a 3-fold lower nonspecific adsorption to immobilized nonimmune IgG. Due to these properties of DNP-Ins-Fl, as little as 50 pmol of DNP-lysine could be detected in the **fluorescent** continuous flow immunoassay.

CC 9-10 (Biochemical Methods)
ST antigen detn continuous flow immunoassay
IT Immunoassay
(continuous flow, antigen detn. by, biosensor for)
IT Antigens
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by continuous flow immunoassay, biosensor for)
IT Biosensors
(immunol., for antigen detn. by continuous flow immunoassay)

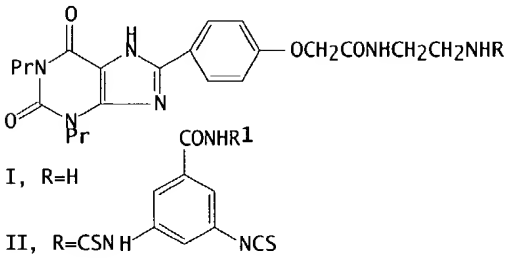
L34 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:604814 CAPLUS
DOCUMENT NUMBER: 115:204814
TITLE: Biosynthesis of collagen crosslinks. III. In vivo **labeling** and stability of lung collagen in rats with bleomycin-induced pulmonary fibrosis
AUTHOR(S): Last, Jerold A.; Reiser, Karen M.
CORPORATE SOURCE: Sch. Med., Univ. California, Davis, CA, 95616, USA
SOURCE: American Journal of Respiratory Cell and Molecular Biology (**1989**), 1(2), 111-17
CODEN: AJRBEL; ISSN: 1044-1549
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Rats were injected i.p. with 1 mCi (each) of [3H]lysine at day 11 of neonatal life to **label** their lung collagen. Five weeks later, half of the animals were given an intratracheal injection of 1.5 U of bleomycin sulfate via a tracheostomy; control animals received saline intratracheally by the same technique. Age-matched groups of control and bleomycin-treated rats were killed, and their lung collagen was analyzed at zero (control animals only), 1, 2, 4, 6, and 10 wk after bleomycin administration, a time course appropriate for development of pulmonary fibrosis in this animal model. The authors measured radioactivity in hydroxylysine and in the difunctional collagen crosslinks hydroxylysinonorleucine and dihydroxylysinonorleucine at each time point. No evidence of breakdown of this pool of mature, preformed collagen was obsd. in lungs of either the control or the bleomycin-treated rats. The authors also measured the total lung content of hydroxypyridinium, and **trifunctional** collagen crosslink, by its intrinsic **fluorescence**. There was no evidence of collagen degrdn. in lungs of either group of rats by this criterion either. Thus, there is no biochem. detectable turnover of mature lung collagen, defined as that pool of lung collagen that is obligatorily extracellular (i.e., crosslinked and contg. **labeled** hydroxylysine from an injection of precursor 5 to 15 wk earlier), in either normal rat lungs or lungs of rats made fibrotic with bleomycin. The methodol. was sensitive and precise enough to have detected turnover of <0.5% of lung collagen per day, .apprx.20-fold less than ests. of lung collagen turnover that have been suggested to be occurring in vivo by using different techniques and presumably studying different pools of lung collagen.

CC 14-4 (Mammalian Pathological Biochemistry)
ST lung fibrosis collagen crosslink degrdn
IT Collagens, biological studies
RL: BIOL (Biological study)
(degrdn. and turnover of mature, of lung, lung fibrosis in relation to)
IT Lung, disease or disorder
(fibrosis, mature collagen degrdn. in lung in relation to)

L34 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:505429 CAPLUS
DOCUMENT NUMBER: 115:105429
TITLE: **Trifunctional** agents as a design strategy for tailoring ligand properties: irreversible inhibitors of A1 adenosine receptors
AUTHOR(S): Boring, Daniel L.; Ji, Xiao Duo; Zimmet, Jeff; Taylor, Kirk E.; Stiles, Gary L.; Jacobson, Kenneth A.
CORPORATE SOURCE: Lab. Bioorg. Chem., Natl. Inst. Diabetes, Dig. Kidney Dis., Bethesda, MD, 20892, USA
SOURCE: Bioconjugate Chemistry (**1991**), 2(2), 77-88
CODEN: BCCHES; ISSN: 1043-1802
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I, R=H

II, R=CSN H NCS

AB The 1,3-phenylene diisothiocyanate conjugate of XAC (I), a potent A1 selective adenosine antagonist) was characterized as an irreversible inhibitor of A1 adenosine receptors. To further extend this work, a series of analogs (e.g., II) were prepd. contg. a third substituent in the phenylisothiocyanate ring, incorporated to modify the physicochem. or spectroscopic properties of the conjugate. Sym. **trifunctional** crosslinking reagents bearing two isothiocyanate groups were prepd. as general intermediates for crosslinking functionalized congeners and receptors. Xanthine isothiocyanate derivs. contg. hydrophilic, **fluorescent**, or reactive substituents, linked via an amide, thiourea, or methylene group in the 5-position, were synthesized and found to be irreversible inhibitors of A1 adenosine receptors. The effects of the 5-substituent on water soly. and on the A1/A2 selectivity ratios derived from binding assays in rat brain membranes were examd. Inhibition of binding of [3H]-N6-(2-phenylisopropyl)adenosine and [3H]CGS 21680 [2-[2-[4-(2-carboxyethyl)phenyl]ethyl]amino]adenosine-5'-N-ethylcarboxamide] at central A1 and A2 adenosine receptors, resp., was measured. A conjugate of XAC and 1,3,5-triisothiocyanatobenzene was 894-fold selective for A1 receptors. Reporter groups, such as **fluorescent** dyes and a spin-**label**, were included as chain substituents in the irreversibly binding analogs, which were designed for spectroscopic assays, histochem. characterization, and biochem. characterization of the receptor protein.

CC 1-3 (Pharmacology)
Section cross-reference(s): 9

ST A1 adenosine receptor inhibitor

IT Solubility
(of isothiocyanatophenyl conjugates of amine group-contg. xanthine derivs., A1 adenosine receptor irreversible inhibitors in relation to)

IT Receptors
RL: BIOL (Biological study)
(purinergic A1, irreversible inhibitors of, isothiocyanatophenyl conjugates of amine group-contg. xanthine derivs. as)

IT Molecular structure-biological activity relationship
(purinergic A1 antagonist, of isothiocyanatophenyl conjugates of amine group-contg. xanthine derivs.)

IT 120059-19-0
RL: BIOL (Biological study)
(A1 adenosine receptor inhibitory activity of, isothiocyanate derivs. in relation to)
IT 58-61-7, Adenosine, biological studies
RL: BIOL (Biological study)
(A1 receptors for, irreversible inhibitors of, isothiocyanatophenyl conjugates of amine group-contg. xanthine derivs. as)
IT 108-00-9, N,N-Dimethylethylenediamine 1001-53-2, N-Acetylethylenediamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation of, with dinitrobenzoyl chloride)
IT 99-33-2, 3,5-Dinitrobenzoylchloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of)
IT 108-45-2, 1,3-Phenylenediamine, biological studies 618-56-4, 3,5-Diaminobenzoic acid dihydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(butoxy carbonylation of)
IT 133887-95-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and A1 adenosine receptor inhibitory activity of)
IT 133887-82-8P 133887-99-7P 133888-00-3P 133888-01-4P 133888-02-5P
133888-03-6P 133888-04-7P 133888-05-8P 133888-06-9P 133888-07-0P
133888-08-1P 133888-09-2P 133888-10-5P 133888-11-6P 133888-12-7P
133888-13-8P 133888-14-9P 133888-15-0P 133888-16-1P 133888-17-2P
133888-18-3P 133909-49-6P 133909-50-9P 133909-51-0P 133983-35-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and A1 adenosine receptor inhibitory activity of)
IT 133887-85-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and acylation of)
IT 133887-86-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and amidation of)
IT 133887-84-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and amidation of, with ethylenediamine)
IT 133887-87-3P 133888-19-4P 133888-20-7P 133888-21-8P 133888-22-9P
133888-23-0P 133888-24-1P 133888-25-2P 133909-52-1P 133909-53-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and deprotection of)
IT 133887-83-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and esterification of)
IT 40479-93-4P 133887-98-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with amine group-contg. xanthine deriv.)
IT 101670-67-1P 133887-91-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with amines)
IT 133887-97-5P 133888-33-2P 133888-34-3P 133888-35-4P 133888-36-5P
133888-37-6P 133888-38-7P 133888-39-8P 133909-56-5P 133930-01-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with amino group-contg. xanthine deriv.)
IT 133888-41-2P 133888-42-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with amino group-contg. xanthine derivs.)
IT 133887-94-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with dipropylxanthine deriv.)
IT 28150-13-2P 68621-88-5P 133888-29-6P 133888-31-0P 133888-32-1P 133909-55-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with thiophosgene)
IT 133887-89-5P 133887-93-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with thiophosgene)
IT 133887-88-4P 133887-92-0P 133888-26-3P 133888-27-4P 133888-40-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and redn. of)
IT 70393-59-8P 133887-90-8P 133887-96-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 96865-92-8DP, XAC, phenylene diisocyanate conjugates
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as irreversible inhibitors of A1 adenosine receptors)
IT 2131-63-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with amine group-contg. xanthine deriv.)
IT 463-71-8, Thiophosgene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with amino group-contg. xanthine derivs.)
IT 3326-32-7 10199-89-0, 4-Chloro-7-nitrobenzofurazan 34071-95-9, N-Succinimidyl 3-(4-hydroxyphenyl)propionate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminobenzoylaminoethylamine deriv.)
IT 133887-81-7 133888-43-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dipropylxanthine deriv.)
IT 107-15-3, Ethylenediamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with isothiocyanatophenyl group-contg. xanthine derivs.)
IT 108-72-5, 1,3,5-Triaminobenzene 141-86-6, 2,6-Diaminopyridine 535-87-5, 3,5-Diaminobenzoic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with thiophosgene)
IT 1949-51-5
RL: BIOL (Biological study)
(reaction with thiophosgene or lithium aluminum hydride redn. of)
IT 618-87-1
RL: BIOL (Biological study)
(redn. or reaction with thiophosgene)

L34 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:425407 CAPLUS
DOCUMENT NUMBER: 115:25407
TITLE: Novel **trifunctional** carrier molecule for the **fluorescent labeling** of haptens
AUTHOR(S): Bredehorst, Reinhard; Wemhoff, Gregory A.; Kusterbeck, Anne W.; Charles, Paul T.; Thompson, Richard B.; Ligler, Frances S.; Vogel, Carl Wilhelm
CORPORATE SOURCE: Dep. Biochem. Mol. Biol., Georgetown Univ., Washington, DC, 20007, USA
SOURCE: Analytical Biochemistry (**1991**), 193(2), 272-9
CODEN: ANBCA2; ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors developed a novel **trifunctional** carrier mol. for the synthesis of hapten-fluorophore conjugates as reporter mols. in immunoassays. This carrier eliminates some of the disadvantages assocd.

with currently used fluorophore-**labeling** procedures including high nonspecific binding. The backbone of the carrier consists of the 21 amino acid residues of the insulin A-chain mol. This polypeptide provides a single site (terminal amino group) for covalent coupling of the hapten, three carboxyl groups for the attachment of fluorophores, and four sulfhydryl groups for derivatization with hydrophilic residues to compensate for the hydrophobic effect of the attached fluorophores. The sites for fluorophore attachment are 4, 17, and 21 amino acids away from the hapten attachment site. This spatial sepn. minimizes quenching of the **fluorescence** signal due to interaction of the fluorophores with each other and with the attached hapten. 2,4-Dinitrophenol (DNP) was selected as model hapten, **fluorescein** as **label**, and S-sulfonate groups as hydrophilic residues. The properties of the DNP-insulin A-chain-**fluorescein** conjugate (DNP-Ins-Fl) were compared to those of a DNP deriv. **labeled** with a single **fluorescein** moiety via a small lysine spacer (DNP-Lys-Fl). The DNP-Ins-Fl conjugate exhibited a 3-fold lower nonspecific adsorption to immobilized non-immune Ig contributing to an approx. 3-fold more efficient displacement from the binding sites of an immobilized monoclonal anti-DNP antibody by the antigen DNP-lysine. Furthermore, at equimolar concns. the DNP-Ins-Fl generated a 2.6-fold higher **fluorescent** signal than DNP-Lys-Fl. Due to these properties of DNP-Ins-Fl, DNP-lysine could be detected with an approx. 10-fold higher sensitivity compared to DNP-Lys-Fl as **labeled** antigen. The use of DNP-Ins-Fl as reporter molecue in a competitive fluoroimmunoassay allowed the quant. detn. of picomole amts. of DNP-lysine.

CC 9-10 (Biochemical Methods)

ST fluoroimmunoassay **trifunctional** carrier mol; immunoassay **trifunctional** carrier mol; dinitrophenol insulin FITC

IT Immunochemical analysis
(**fluorescence** immunoassay, **trifunctional** carrier mol. prepn. for)

IT 24696-20-6
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by fluoroimmunoassay)

IT 134546-27-3P 134649-45-9P
RL: PREP (Preparation)
(prepn. of, for fluoroimmunoassay)

IT 14401-10-6 134664-50-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with FITC)

IT 134649-44-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with carbohydrazide)

IT 27072-45-3, FITC
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with carbohydrazide-derivatized dinitrophenol-insulin A chain in tetra-S-sulfonate form or dinitrophenol-lysine hydrochloride)

IT 497-18-7, Carbohydrazide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrophenol-derivatized insulin A-chain in tetra-S-sulfonate form)

IT 18152-38-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with fluorodinitrobenzene)

IT 70-34-8, 1-Fluoro-2,4-dinitrobenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with insulin A chain in tetra-S-sulfonate form)

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L9           19 SEA FILE=REGISTRY ABB=ON  PLU=ON  (108-55-4/BI OR 150-25-4/BI
                OR 154928-39-9/BI OR 154928-40-2/BI OR 154928-41-3/BI OR
                2321-07-5/BI OR 321858-92-8/BI OR 3282-30-2/BI OR 3318-08-9/BI
                OR 403656-56-4/BI OR 403656-57-5/BI OR 403656-58-6/BI OR
                403656-59-7/BI OR 403656-60-0/BI OR 403656-61-1/BI OR 403656-62
                -2/BI OR 40615-36-9/BI OR 534-03-2/BI OR 82911-69-1/BI)
L15      279378 SEA FILE=REGISTRY ABB=ON  PLU=ON  (N AND O AND H AND C)/ELS
                AND 4/ELC.SUB NOT (RSD/FA OR PMS/CI)
L16           2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L15 AND L9
L35        1119 SEA FILE=CAPLUS ABB=ON  PLU=ON  L16
L36          23 SEA FILE=CAPLUS ABB=ON  PLU=ON  L35 AND FLUORESC?
L37          10 SEA FILE=CAPLUS ABB=ON  PLU=ON  L36 AND (DNA OR NUCLEIC OR
                LABEL?)


=> d ibib abs hitstr l37 1-10

L37  ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2003:583967  CAPLUS
DOCUMENT NUMBER:          139:265603
TITLE:                    Pyridinium-based cationic lipids as gene-transfer
                          agents
AUTHOR(S):                Ilies, Marc Antoniu; Seitz, William A.; Caproiu, Miron
                          T.; Wentz, Melissa; Garfield, Robert E.; Balaban,
                          Alexandru T.
CORPORATE SOURCE:         Department of Marine Sciences, Texas A and M
                          University at Galveston, Galveston, TX, 77551, USA
SOURCE:                   European Journal of Organic Chemistry (2003), (14),
                          2645-2655
                          CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER:                Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Cationic lipids are a promising alternative to viral vectors for gene
     therapy, allowing the delivery of larger plasmids without immunogenicity,
     despite their lower transfection efficiency.  Among them, heterocyclic
     systems with imidazolium or pyridinium polar head groups have definite
     advantages such as the excellent transfection profiles and low
     cytotoxicity.  The authors' approach for synthesizing heterocyclic
     cationic lipids differs from those previously described because the
     authors synthesize a pyridinium ring from simple starting materials.
     First a pyrylium salt is formed via diacylation of alkenes.  The pyrylium
     salt is then converted by primary amines into pyridinium salts.
     Appropriate choice of the primary amine allows the attachment of two
     hydrophobic chains yielding compds. 21A and 25A (with various chain
     lengths derived from palmitic, stearic and oleic acids).  The same
     strategy allowed the prepn. of lipophilic derivs. 21B, 25B useful as
     strongly fluorescent markers for the study of the properties of
     biol. membranes.  Preliminary tests with some of the compds. 21A and 25A,
     on several cell lines, showed comparable transfection efficiencies and
     lower cytotoxicity than those obtained with std. com. transfection agents.
IT   534-03-2, 2-Amino-1,3-propanediol
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (pyridinium-based cationic lipids as gene-transfer agents)
RN   534-03-2  CAPLUS
CN   1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI)  (CA INDEX NAME)
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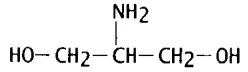

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REFERENCE COUNT:          32    THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
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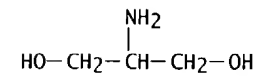
L37 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:710240 CAPLUS
DOCUMENT NUMBER: 138:188003
TITLE: New ligand combinations for the efficient stabilization of short **nucleic** acid hairpins
AUTHOR(S): Michel, Justine; Bathany, Katell; Schmitter, Jean-Marie; Monti, Jean-Pierre; Moreau, Serge
CORPORATE SOURCE: IFR Pathologies Infectieuses, Universite Victor Segalen Bordeaux, Bordeaux, 33076, Fr.
SOURCE: Tetrahedron (2002), 58(39), 7975-7982
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:188003
AB Short **nucleic** acid hairpins (one or two base-pair stems) were strongly stabilized by simple chem. modifications. Non-nucleosidic pyrene or naphthalene diimide derivs. were appended at both 3' and 5' nearby ends of 2'-OMe RNA hairpins, yielding a very large increase in melting temps. of the modified structures (from +21 to +55.degree.C). The excimer formation between the two consecutive pyrene units is in favor of end-stacked pyrenyl rings.
IT **534-03-2**, Serinol
RL: RCT (Reactant); RACT (Reactant or reagent)
(thermal stability, mol. modeling and **fluorescence** of short RNA hairpins appended with pyrene or naphthalene diimide derivs. at the 3' and 5' ends)
RN 534-03-2 CAPLUS
CN 1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:183792 CAPLUS
DOCUMENT NUMBER: 136:232506
TITLE: **Labeling** reagents that are stable during the synthesis of **labeled nucleic** acids
INVENTOR(S): Heindl, Dieter; Sagner, Gregor; Maerz, Heribert; Von der Eltz, Herbert
PATENT ASSIGNEE(S): Roche Diagnostics Gmbh, Germany; F. Hoffmann-La Roche Ag
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

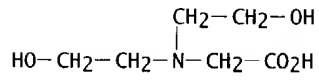
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1186613	A1	20020313	EP 2001-121139	20010904
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10044373	A1	20020321	DE 2000-10044373	20000908
US 2002110691	A1	20020815	US 2001-943411	20010830
JP 2003012951	A2	20030115	JP 2001-272569	20010907

PRIORITY APPLN. INFO.: DE 2000-10044373 A 20000908
OTHER SOURCE(S): MARPAT 136:232506
AB The present invention concerns a **labeling** reagent in which the **label** is bound via an amide bond and a linker to a residue of the

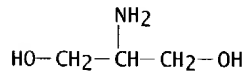
mol. which is essentially characterized in that the N atom of the amide bond and the **label** are linked together directly by a covalent bond. In particular, these are phosphoramidites or reactive supports suitable for **nucleic** acid synthesis, such that the **label** is not subjected to a strong electron-acceptor effect and remains stable during the oligonucleotide synthesis. Such e=mols. contain a substituent having the structural element -CH2-CO-NH-M in which M denotes the detectable **label** such as a **fluorescent** dye, such as **fluorescein** which is optionally provided with protective groups. The covalent amide linking ensures an adequately stable coupling fo the **fluorescent** dye during oligonucleotide synthesis and does not influence the spectral properties of the **fluorescent** dye compared to derivs. coupled with a thiourea linker. The invention also concerns processes for the prodn. of such supports from suitable precursors. Synthetic protocols are provided for the synthesis of (1) glutarylamino-bispivaloylfluorescein NHS ester contg. 1-methoxytrityloxy-3-hydroxy-2-aminopropane and (2) N-(2-hydroxyethyl)-N-(2-dimethoxytrityloxyethyl)-5-(2-amino-ethylcarboxamido)-bispivaloylfluorescein, and their use in **labeling** during solid-phase **nucleic** acid synthesis.

IT **150-25-4**, Bicine **534-03-2**, Serinol
RL: RCT (Reactant); RACT (Reactant or reagent)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)

RN 150-25-4 CAPLUS
CN Glycine, N,N-bis(2-hydroxyethyl)- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 534-03-2 CAPLUS
CN 1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:158024 CAPLUS
DOCUMENT NUMBER: 136:211837
TITLE: Chimeric oligonucleotides as primers for isothermal **nucleic** acid amplification and probes for detection
INVENTOR(S): Sagawa, Hiroaki; Uemori, Takashi; Mukai, Hiroyuki; Yamamoto, Junko; Tomono, Jun; Kobayashi, Eiji; Enoki, Tatsuji; Asada, Kiyozo; Kato, Ikunoshin
PATENT ASSIGNEE(S): Takara Shuzo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 332 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002016639	A1	20020228	WO 2001-JP7139	20010821

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT,
RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001078783	A5	20020304	AU 2001-78783	20010821
EP 1312682	A1	20030521	EP 2001-956988	20010821

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

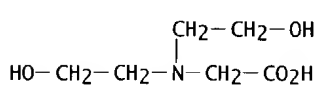
PRIORITY APPLN. INFO.:	JP 2000-251981	A 20000823
	JP 2000-284419	A 20000919
	JP 2000-288750	A 20000922
	JP 2001-104191	A 20010403
	WO 2001-JP7139	W 20010821

AB A method of highly sensitively and specifically amplifying a target **nucleic** acid in a sample by using a chimeric oligonucleotide primer having a ribonucleotide provided at the 3'-terminus or in the 3'-terminal side, an endoribonuclease and a **DNA** polymerase having a strand displacement activity, i.e., an isothermal and chimeric primer-initiated amplification of **nucleic** acids (ICAN) method; a method of detecting an amplified fragment obtained by using the above method; a process for producing a target **nucleic** acid by using the above amplification method; and chimeric oligonucleotide primers to be used in these methods, are disclosed. Application of this method in detection of pathogenic microorganisms such as enterohemorrhagic E. coli, Clostridium botulinum, Staphylococcus aureus, Mycobacterium tuberculosis, chlamydia, papilloma virus, hepatitis virus C, or viroid, and disease-assocd. genes, is claimed. Use of spermidine or propylene diamine in annealing soln., and bicin or HEPES in buffer, is claimed. Use of manganese ion for stimulating endonuclease activity, and phosphonoformic acid as **DNA** polymerase activity inhibitor, is claimed. The chimeric oligonucleotide primers have deoxyribonucleotides at the 3' end replaced by ribonucleotides, which can be removed by endonuclease. Single or double stranded **DNA**, cDNA, or RNA can be used as template. For detecting a target **nucleic** acid, **fluorescent labeled** RNA probe immobilized on an array are used. A single stranded **DNA** and cDNA derived from RNA were used as template for amplification. Bacillus stearothermophilus derived **DNA** polymerase lacking 5'-3' exonuclease activity Bst **DNA** polymerase, or Bacillus caldotenax derived **DNA** polymerase lacking 5'-3' exonuclease activity Bca **DNA** polymerase, RNase H from E. coli, Thermotoga, Thermus, Pyrococcus, Archaeoglobus, or Bacillus, and chimeric oligonucleotide primers were used. E. coli O-157 strain was detected using the **nucleic** acid amplification method described above.

IT **150-25-4**, Bicine
RL: MOA (Modifier or additive use); USES (Uses)
(buffer; chimeric oligonucleotides as primers for isothermal **nucleic** acid amplification and probes for detection)

RN 150-25-4 CAPLUS

CN Glycine, N,N-bis(2-hydroxyethyl)- (6CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

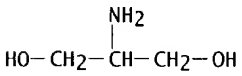
ACCESSION NUMBER:	1999:789716 CAPLUS
DOCUMENT NUMBER:	132:22182
TITLE:	Preparation of antibody for immunoassay of FTY720

library mixts. of the oligomers and the use of the oligomers as selective target-binding compds. are described. An example of a simple oligomeric phosphodiester which was synthesized is II.

IT **534-03-2**, Serinol
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of nonnucleotide monomers and combinatorial library mixts. of phosphorus ester oligomers)

RN 534-03-2 CAPLUS

CN 1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L37 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:37531 CAPLUS

DOCUMENT NUMBER: 116:37531

TITLE: Reversible modification of biological compounds for detection, separation and purification thereof

INVENTOR(S): Coull, James M.; Gildea, Brian; Koester, Hubert

PATENT ASSIGNEE(S): Millipore Corp., USA

SOURCE: Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

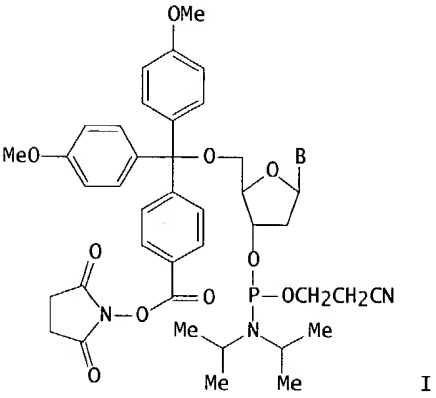
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 424819	A1	19910502	EP 1990-120093	19901019
EP 424819	B1	19941228		
R: DE, FR, GB, IT, NL, SE				
US 5410068	A	19950425	US 1989-425740	19891023
JP 03279371	A2	19911210	JP 1990-283585	19901023

PRIORITY APPLN. INFO.: US 1989-425740 19891023

OTHER SOURCE(S): MARPAT 116:37531

GI



I

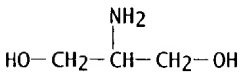
AB Compds. and methods are provided for the reversible modification of natural products, natural product synthons, biopolymers, or biopolymer synthons, e.g. nucleosides, nucleotides, oligonucleosides. The modification allows a variety of chemistries to be performed on these compds., yet can be removed to regenerate functional groups on the natural

product, biopolymer, or synthon of interest. The compds. of the invention serve as a protecting group for a functional group on the natural product, biopolymer, or synthon, and as a linking group for attaching a modifying moiety thereto. Prepn. of N-succinimidyl-4-[bis-4-(methoxyphenyl)-5'-O-(3'-O-(N,N-diisopropylamino-2-cyanoethylphosphinyl)-2-deoxynucleosidyl)-methyl] benzoates (I), e.g. I (B = thymine), is described. The modified nucleosides were used in the synthesis of biotin- and **fluorescein -labeled** polymerase chain reaction (PCR) oligonucleotide primers. Use of the 5'-modified oligonucleotides of the invention for the purifn. of PCR products was demonstrated.

IT **534-03-2**, 2-Amino-1,3-propanediol
RL: ANST (Analytical study)
(aminolysis of hydroxysuccinimidyl group of heterofunctional protecting group-contg. nucleoside deriv. with)

RN 534-03-2 CAPLUS

CN 1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L37 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:467835 CAPLUS

DOCUMENT NUMBER: 115:67835

TITLE: A new multiphasic buffer system for sodium dodecyl sulfate-polyacrylamide gel electrophoresis of proteins and peptides with molecular masses 100,000-1000, and their detection with picomolar sensitivity

AUTHOR(S): Wiltfang, Jens; Arold, Norbert; Neuhoff, Volker

CORPORATE SOURCE: Forschungsstelle Neurochem., Max-Planck-Inst. Exp. Med., Goettingen, 3400, Germany

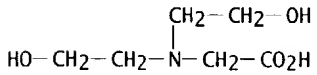
SOURCE: Electrophoresis (1991), 12(5), 352-66
CODEN: ELCTDN; ISSN: 0173-0835

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A novel multiphasic buffer system for high-resoln. SDS-PAGE of dansylated and nondansylated proteins/peptides in the relative mol. mass (Mr) range of 100,000-1000 is described. The system, based on Jovin's theory of multiphasic zone electrophoresis, allows complete stacking and destacking of proteins/peptides within the above Mr range. The buffer system uses Bicine and sulfate as trailing and leading ion, resp., and Bistris and Tris as counter ions in the stacking and sepg. phase, resp. Through selection of 2 different counter ions, the characteristic feature of the present ionic system, the stacking limits of a multiphasic buffer system can be further widened, thus making it applicable to gel electrophoresis of a larger spectrum of rapidly migrating species, such as SDS-proteins/peptides and **nucleic** acids, than has been possible previously. Highly sensitive detection methods for proteins as well as for polypeptides down to approx. Mr 1000 are described. Dansylated proteins/peptides were detected by their **fluorescence** either directly within the gel or following electroblotting into anion-exchange or polyvinylidene difluoride membranes. The latter procedure resulted in detection sensitivities of approx. 1 ng. Nondansylated proteins/peptides were either detected within the gel by colloidal Coomassie staining or by electroblotting into polyvinylidene difluoride membranes, followed by colloidal gold staining. Prior to both staining procedures the proteins/peptides were pretreated with glutardialdehyde in the presence of borate at near neutral pH values to generate protein/peptide polymers of poor soly. For a given pH the efficiency of the latter procedure was significantly influenced by the nature of the buffer ion used in the fixation buffer. In contrast to conventional fixation procedures even small polypeptides (Mr 1000) were immobilized and approx. 15 ng and 0.75 ng could be detected after colloidal Coomassie and colloidal gold staining, resp.

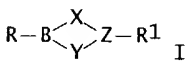
IT **150-25-4**
RL: ANST (Analytical study)
(as trailing ion, in gel electrophoresis of peptides and proteins)
RN 150-25-4 CAPLUS
CN Glycine, N,N-bis(2-hydroxyethyl)- (6CI, 8CI, 9CI) (CA INDEX NAME)



L37 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1984:420209 CAPLUS
DOCUMENT NUMBER: 101:20209
TITLE: Reporter compounds
INVENTOR(S): Gallop, Paul M.; Paz, Mercedes
PATENT ASSIGNEE(S): Children's Hospital Medical Center, Philadelphia, USA
SOURCE: PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

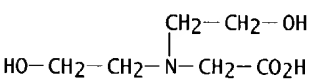
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8304255	A1	19831208	WO 1982-US725	19820526
W: DE, GB, JP				
RW: AT, BE, CH, DE, FR, GB, LU, NL, SE				
EP 110879	A1	19840620	EP 1982-902137	19820526
R: AT, BE, CH, DE, FR, GB, LI, LU, NL, SE				

PRIORITY APPLN. INFO.: WO 1982-US725 19820526
GI



AB A new class of water-sol. reagents named boronate-dependent phase-transfer compds. (I, R = a reporter group, e.g. a fluorophore, chromophore, organometallic group, drug, antigen, or isotopically **labeled** group; Z = a receptor group; R1 = a carrier group; and X = Y = N, O, or S) is described. I allows groups that can report on conditions within living cells or modify metabolic parameters within tissues to be taken up by the cells under nontoxic conditions. I has a broad range of applications and can be used for staining living cells for disease diagnosis, for solubilization of drugs, for staining proteins, for staining or brightening fabrics, for staining paper products, and for various assay methods, such as peroxide, antibody, glucose, and esterase detns. in which **fluorescence** or color intensity is measured. An app. is also described for assaying, in aq. soln., a compd. which participates in a chem. reaction which results in the prodn. of peroxide.

IT **150-25-4**
RL: ANST (Analytical study)
(boronate-dependent phase-transfer compds. in relation to)
RN 150-25-4 CAPLUS
CN Glycine, N,N-bis(2-hydroxyethyl)- (6CI, 8CI, 9CI) (CA INDEX NAME)



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    ||                                    ||
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1   2   3   4   5   6                 @9  10 @12


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VAR G2=N/CH
REP G3=(1-20) CH2
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CONNECT IS E2  RC AT   9
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GGCAT   IS LIN  SAT  AT   8
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  12

STEREO ATTRIBUTES: NONE
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L27          16 SEA FILE=REGISTRY SUB=L25 SSS FUL L18
L29           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L27


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L29  ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2001:780750  CAPLUS
DOCUMENT NUMBER:          135:348958
TITLE:                    Antithrombogenic membrane mimetic compositions and
                          methods
INVENTOR(S):              Chaikof, Elliot L.; Feng, June; Orban, Janine M.; Liu,
                          Hongbo; Sun, Xue-Long
PATENT ASSIGNEE(S):       Emory University, USA
SOURCE:                   PCT Int. Appl., 74 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   3
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2001078800      A1   20011025       WO 2001-US12094  20010413
         W:  AU, CA, JP, US
         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE, TR
     EP 1272237         A1   20030108       EP 2001-926959   20010413
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     JP 2004511267      T2   20040415       JP 2001-576099   20010413
PRIORITY APPLN. INFO.:                   US 2000-197072P  P  20000413
                                         US 2000-221618P  P  20000728
                                         WO 2001-US12094  W  20010413
OTHER SOURCE(S):          MARPAT 135:348958
AB   The present specification describes materials and methods which provide
     for improved performance of medical prostheses, including vascular graft
     material, artificial heart valves, and other implanted materials.  The
     materials comprising bound thrombomodulin or a functionally equiv. deriv.
     protein, provide for fewer undesirable side effects including
     inflammation, thromboses and neointimal hyperplasia.  Acrylic-
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phosphatidylcholine (prepn. given) liposomes contg. thrombomodulin were prepd. and photopolymd. Over 95% of the thrombomodulin activity was found to be assocd. with the lipid vesicles.

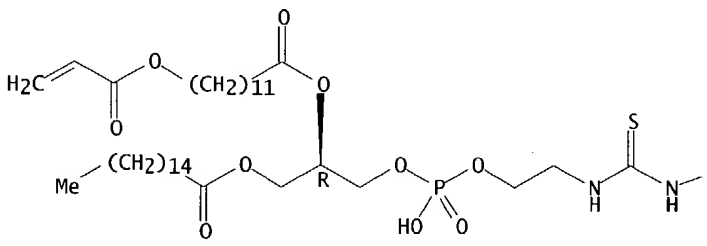
IT **370102-90-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(antithrombogenic membrane mimetic compns. and methods)

RN 370102-90-2 CAPLUS

CN Hexadecanoic acid, (2R)-10-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-5-hydroxy-5-oxido-2-[[1-oxo-12-[(1-oxo-2-propenyl)oxy]dodecyl]oxy]-10-thioxo-4,6-dioxa-9-aza-5-phosphadec-1-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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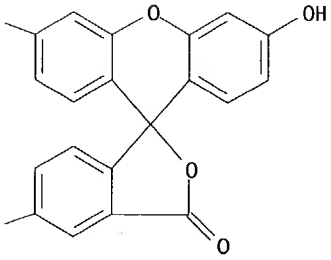


IC ICM A61L033-00
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 23
ST antithrombogenic medical good thrombomodulin liposome
IT Polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amphiphilic; antithrombogenic membrane mimetic compns. and methods)
IT Anticoagulants
Polyelectrolytes
Prosthetic materials and Prosthetics
(antithrombogenic membrane mimetic compns. and methods)
IT Thrombomodulin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antithrombogenic membrane mimetic compns. and methods)
IT Acrylic polymers, biological studies
Collagens, biological studies
Gelatins, biological studies
Glass, biological studies

Metals, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antithrombogenic membrane mimetic compns. and methods)
IT Phospholipids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antithrombogenic membrane mimetic compns. and methods)
IT Medical goods
(antithrombogenic; antithrombogenic membrane mimetic compns. and methods)
IT Organ, animal
(artificial; antithrombogenic membrane mimetic compns. and methods)
IT Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(c; antithrombogenic membrane mimetic compns. and methods)
IT Artery
(carotid; antithrombogenic membrane mimetic compns. and methods)
IT Phosphatidylcholines, biological studies
Phosphatidylethanolamines, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(conjugates; antithrombogenic membrane mimetic compns. and methods)
IT Prosthetic materials and Prosthetics
(implants, vascular; antithrombogenic membrane mimetic compns. and methods)
IT Prosthetic materials and Prosthetics
(implants; antithrombogenic membrane mimetic compns. and methods)
IT Drug delivery systems
(liposomes; antithrombogenic membrane mimetic compns. and methods)
IT Medical goods
(stents; antithrombogenic membrane mimetic compns. and methods)
IT Medical goods
(tubes; antithrombogenic membrane mimetic compns. and methods)
IT Heart
(valve, artificial; antithrombogenic membrane mimetic compns. and methods)
IT Heart
(valve; antithrombogenic membrane mimetic compns. and methods)
IT Transplant and Transplantation
(xenotransplant; antithrombogenic membrane mimetic compns. and methods)
IT 7440-21-3, Silicon, biological studies 9005-32-7, Alginic acid 25104-18-1, Poly L-lysine 38000-06-5, Poly L-lysine 278803-41-1
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antithrombogenic membrane mimetic compns. and methods)
IT 57-10-3, Palmitic acid, reactions 302-04-5, Isothiocyanate, reactions 32159-15-2 35013-72-0 55750-63-5 99743-69-8 109786-74-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(antithrombogenic membrane mimetic compns. and methods)
IT 139100-83-7P 370102-86-6P 370102-87-7P 370102-88-8P 370102-89-9P **370102-90-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(antithrombogenic membrane mimetic compns. and methods)
IT 370102-91-3P 370102-92-4P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(antithrombogenic membrane mimetic compns. and methods)
IT 182036-73-3 337453-78-8 370970-04-0 370970-05-1
RL: PRP (Properties)
(unclaimed nucleotide sequence; antithrombogenic membrane mimetic compns. and methods)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

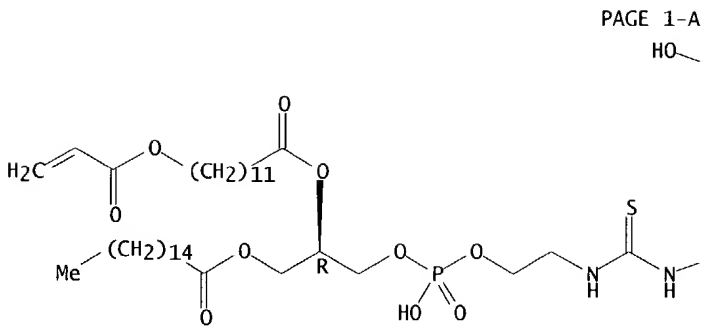
ACCESSION NUMBER: 2001:661955 CAPLUS
DOCUMENT NUMBER: 135:372055
TITLE: Fabrication and characterization of a polymeric lipid membrane on a polyelectrolyte thin film
AUTHOR(S): Sun, Xue-Long; Liu, Hongbo; Faucher, Keith M.; Feng, June; Chaikof, Elliot L.
CORPORATE SOURCE: Departments of Bioengineering and Surgery, Emory University School of Medicine, Atlanta, GA, 30322, USA
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 109-110
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB A robust, membrane-mimetic layer of mono-acrylated lipid copolymer was prepd. on a poly(L-lysine) (PLL) and alginate hydrogel polyelectrolyte multilayer on a glass slide substrate. The polyacrylate is an amphiphilic terpolymer of hydroxyethyl acrylate, p-sodium styrenesulfonate, and N,N-octadecylcarbamoyl-propionic acid, having flexible spacer and anionic substituents that anchor onto the cationic substrate. After the lipid vesicle is fused to the hydrogel, the lipid assembly is stabilized via in-situ photopolymn. Contact angle measurements confirmed the formation and stability of the film, and ellipsometry, IR spectra, and confocal microscopy data were also obtained. The supported lipid membrane is stable for at least four weeks in water. Fluorescent dye modified surfaces were prepd. using vesicle solns. of 1-palmitoyl-2-[12-(acryloyloxy)dodecanoyl]-sn-glycero-3-phosphorylcholine [mono-AcrylPC] and mono-AcrylPE-FITC on the polyacrylate charged multilayers on a silicon wafer instead of glass. The alkylated charged multilayer was incubated in the vesicle soln. followed by photopolymn. using Eosin Y/triethanolamine as co-initiator. The resultant mixed lipid-surface was imaged using confocal microscopy. The formation of the lipid film was confirmed by fluorescence of the surface. The membrane assemblies are of interest for use in characterization of protein function and cell-cell interactions.
IT **373643-45-9P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (dye-lipid fluorescent layer; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)
RN 373643-45-9 CAPLUS
CN 3,5,8,21-Tetraoxa-4-phosphatetracos-23-en-1-aminium, 4-hydroxy-N,N,N-trimethyl-9,22-dioxo-7-[[(1-oxohexadecyl)oxy]methyl]-, inner salt, 4-oxide, polymer with (2R)-10-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-5-hydroxy-5-oxido-2-[[1-oxo-12-[(1-oxo-2-propenyl)oxy]dodecyl]oxy]-10-thioxo-4,6-dioxa-9-aza-5-phosphadec-1-yl hexadecanoate (9CI) (CA INDEX NAME)

CM 1

CRN 370102-90-2
CMF C57 H79 N2 O15 P S

Absolute stereochemistry.

PAGE 1-A



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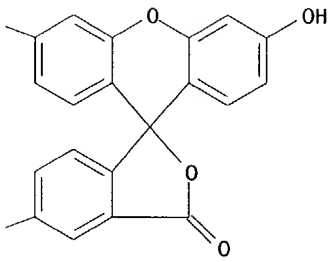
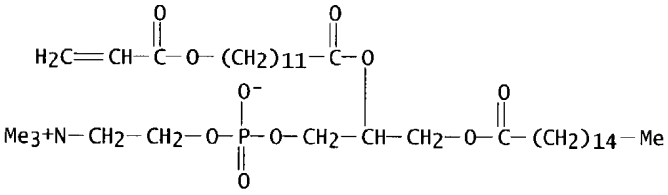


CM 2

CRN 146059-03-2
CMF C39 H74 N O10 P



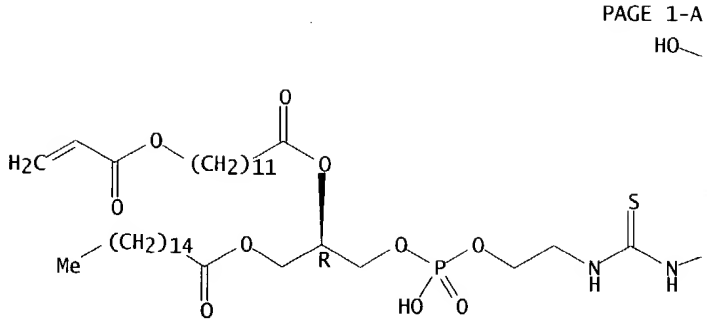
IT **370102-90-2**
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(monomer; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

RN 370102-90-2 CAPLUS

CN Hexadecanoic acid, (2R)-10-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-5-hydroxy-5-oxido-2-[[1-oxo-12-[(1-oxo-2-propenyl)oxy]dodecyl]oxy]-10-thioxo-4,6-dioxa-9-aza-5-phosphadec-1-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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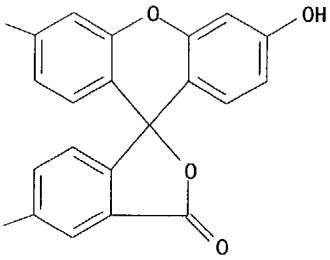


CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 37, 63

ST acrylate terpolymer prepn polylysine alginate multilayer polyelectrolyte; photopolymn lipid acrylate membrane polyelectrolyte multilayer; phospholipid photopolymerizable vesicle alkyl multilayer silicon wafer

IT Phospholipids, preparation
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(bilayers; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT Polymerization
(photopolymn.; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT Contact angle
Fluorescence
Glass substrates
Vesicles (colloidal)
(prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT **373643-45-9P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(dye-lipid fluorescent layer; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 146059-03-2 **370102-90-2**
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(monomer; prepn. of acrylate-lipid terpolymer on polylysine/alginate

polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 373643-43-7P, N,N-Dioctadecylcarbamoylpropionic acid-2-hydroxyethyl acrylate-sodium p-styrenesulfonate copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(photocrosslinked; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 102-71-6, Triethanolamine, uses
RL: CAT (Catalyst use); USES (Uses)
(photoinitiator with Eosin Y; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 17372-87-1, Eosin Y
RL: CAT (Catalyst use); USES (Uses)
(photoinitiator with triethanolamine; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 25104-18-1P, Poly(L-lysine)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 9005-32-7, Alginic acid 38000-06-5, Poly(L-lysine)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(substrate multilayer; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

IT 7440-21-3, Silicon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; prepn. of acrylate-lipid terpolymer on polylysine/alginate polyelectrolyte multilayer and fusion of dye-labeled phospholipid vesicle and in-situ photopolymn. to obtain mixed lipid membrane-mimetic layer)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

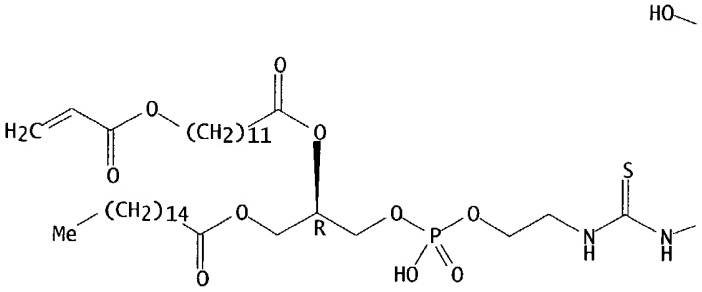
L29 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:627642 CAPLUS
DOCUMENT NUMBER: 135:354916
TITLE: Synthesis and terminal functionalization of a polymerizable phosphatidylethanolamine
AUTHOR(S): Sun, Xue-Long; Liu, Hongbo; Orban, Janine M.; Sun, Lijun; Chaikof, Elliot L.
CORPORATE SOURCE: Laboratory for Biomolecular Materials Research Department of Surgery and Bioengineering, Emory University School of Medicine, Atlanta, GA, 30322, USA
SOURCE: Bioconjugate Chemistry (2001), 12(5), 673-677
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We report the design and synthesis of bifunctional phospholipid conjugates, which contain a polymerizable acrylate group and a terminal linker, such as biotin or N-(.epsilon.-maleimidocaproyl) to facilitate bioconjugation reactions. The lipid conjugate can be used to generate a multifunctional substrate-supported phospholipid film that is further stabilized via in-situ photocopolymn.

IT **370102-90-2P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
RN 370102-90-2 CAPLUS
CN Hexadecanoic acid, (2R)-10-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-5-hydroxy-5-oxido-2-[[1-oxo-12-[(1-oxo-2-propenyl)oxy]dodecyl]oxy]-10-thioxo-4,6-dioxa-9-aza-5-phosphadec-1-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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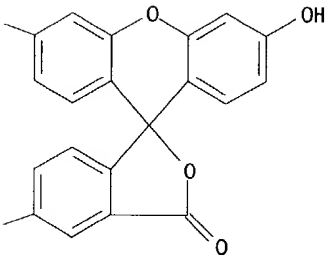


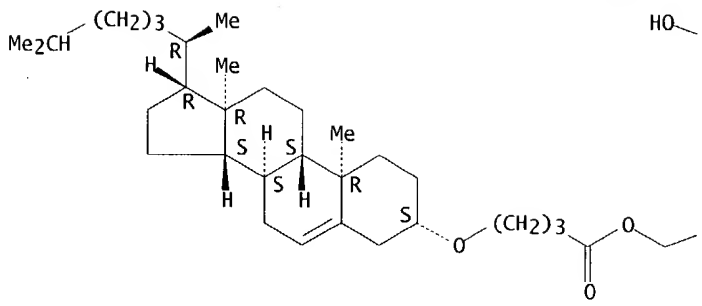
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 23, 37, 63
ST phosphatidylethanolamine polymerizable membrane prepn
IT Spheres
(beads; prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT Membranes, nonbiological
(films; prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT Polymerization
(photopolymn.; prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT 9005-32-7, Alginic acid
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(beads; prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT 149918-67-2
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT 370102-89-9P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT **370102-90-2P** 370102-91-3P 370102-92-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT 57-10-3, Palmitic acid, reactions 27072-45-3, FITC 32159-15-2
35013-72-0 55750-63-5 99743-69-8 109786-74-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
IT 139100-83-7P 370102-86-6P 370102-87-7P 370102-88-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and terminal functionalization of polymerizable phosphatidylethanolamine)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

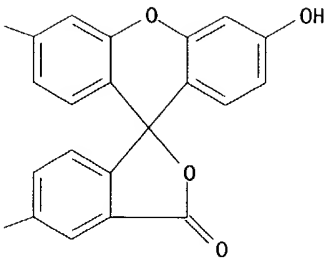
L29 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:993332 CAPLUS
DOCUMENT NUMBER: 124:105422
TITLE: Analysis of .gamma.-(Cholesteryloxy)butyric Acid in Biologic Samples by Derivatization with 5-(Bromomethyl)fluorescein Followed by High-Performance Liquid Chromatography with Laser-Induced Fluorescence Detection
AUTHOR(S): Mukherjee, Partha S.; Karnes, H. Thomas
CORPORATE SOURCE: Medical College of Virginia, Virginia Commonwealth University, Richmond, VA, 23298-0533, USA
SOURCE: Analytical Chemistry (1996), 68(2), 327-32
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This report describes the first application of 5-(bromomethyl)fluorescein (5-BMF) for the quantitation of a pharmaceutically relevant carboxyl-contg. analyte in a biol. matrix. An anal. method for quantitation of .gamma.-(cholesteryloxy)butyric acid (CBA), a relatively new antitumor agent, in different tissues of Sprague-Dawley rats was developed. 5-BMF was employed to form a stable and spectrally well-characterized conjugate of CBA. The derivatization yield was maximized by optimizing several reaction variables. The conjugate was sepd. by HPLC and quantitated by a lab.-constructed argon ion laser fluorometer. The detection limits for CBA were 4.6 .times. 10-9 and 6.34 .times. 10-11M by conventional and laser-induced fluorescence (LIF), resp. A derivatization limit of detection of 1.85 .times. 10-9M was achieved by LIF for the conjugate. The anal. method was useful for quantitation of CBA in various tissues in the picogram per mL range.
IT **172850-25-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cholesteryloxybutyric acid detn. by derivatization with bromomethylfluorescein and HPLC/fluorometry)
RN 172850-25-8 CAPLUS
CN Butanoic acid, 4-[[(3.beta.)-cholest-5-en-3-yl]oxy]-, (3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



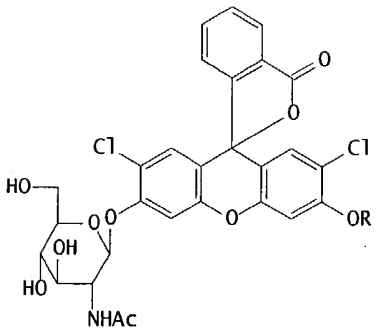
PAGE 1-B



CC 1-1 (Pharmacology)
ST tissue cholesteryloxybutyrate detn bromomethylfluorescein derivatization; HPLC cholesteryloxybutyrate detn tissue; laser induced fluorescence detection cholesteryloxybutyrate; liq chromatog cholesteryloxybutyrate detn
IT Animal tissue
(cholesteryloxybutyric acid detn. by derivatization with bromomethylfluorescein and HPLC/fluorometry)
IT 156908-81-5
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(cholesteryloxybutyric acid detn. by derivatization with bromomethylfluorescein and HPLC/fluorometry)
IT 148942-72-7, 5-(Bromomethyl)fluorescein
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(cholesteryloxybutyric acid detn. by derivatization with bromomethylfluorescein and HPLC/fluorometry)
IT **172850-25-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(cholesteryloxybutyric acid detn. by derivatization with bromomethylfluorescein and HPLC/fluorometry)

L29 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:218340 CAPLUS
DOCUMENT NUMBER: 120:218340
TITLE: Glycosides having chromophores as substrates for sensitive enzyme analysis. V. Synthesis of 6'-O-substituted 2',7'-dichlorofluorescein N-acetyl-.beta.-D-glucosaminides as substrates for the rate-assay of N-acetyl-.beta.-D-glucosaminidase
AUTHOR(S): Kasai, Kouichi; Okada, Kiyoshi; Yamaji, Nobuyuki
CORPORATE SOURCE: Res. Dev. Div., Kikkoman Corp., Noda, 278, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1993), 41(9), 1513-20

CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

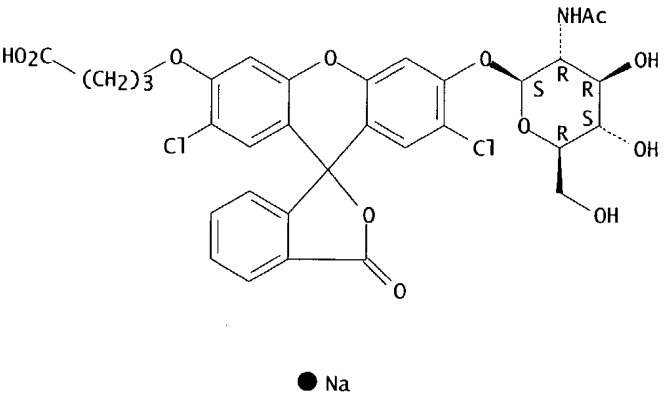
AB Sixteen novel 6'-O-substituted 2',7'-dichlorofluorescein N-acetyl-.beta.-D-glucosaminides, e.g. I [R = CH2CO2Na, CH(CO2Na)2, CH2CH2R1, R1 = OH, NH2, NMe2, SO3Na], were synthesized from 2',7'-dichlorofluoresein. These N-acetyl-.beta.-D-glucosaminides were examd. to evaluate their soly. under the weakly acidic rate-assay conditions (pH 5.0) and their kinetic parameters with N-acetyl-.beta.-D-glucosaminidase.

IT **153753-49-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as substrate for the rate-assay of N-acetyl-.beta.-D-glucosaminidase)

RN 153753-49-2 CAPLUS

CN Butanoic acid, 4-[[6'-[[2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]oxy]-2',7'-dichloro-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● Na

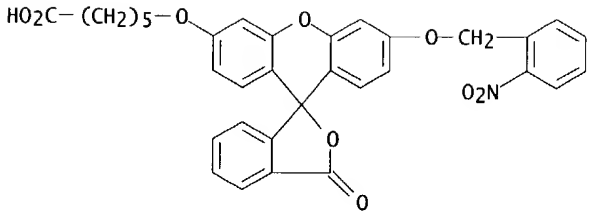
CC 33-7 (Carbohydrates)
Section cross-reference(s): 7

ST chlorofluorescein glucosaminide prepn hydrolysis glucosaminidase; glycoside chromophore glucosaminidase rate assay

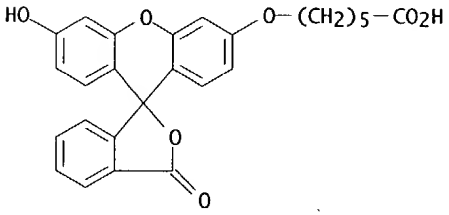
IT Glycosides
RL: SPN (Synthetic preparation); PREP (Preparation)
(chlorofluorescein glucosaminides, prepn. of, as substrates for the

rate-assay of N-acetyl-.beta.-D-glucosaminidase)
IT Hydrolysis
(glucosaminidase, of chlorofluorescein glucosaminides)
IT 3068-34-6P 7790-94-5P, Chlorosulfonic acid 148806-88-6P 153753-60-7P
153753-61-8P 153753-62-9P 153753-63-0P 153753-64-1P,
3'-O-Carboxymethyl-2',7'-dichlorofluorescein
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, in prepn. of chlorofluorescein glucosaminides as substrate for the rate-assay of N-acetyl-.beta.-D-glucosaminidase)
IT 9012-33-3P, N-Acetyl-.beta.-D-glucosaminidase
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of chlorofluorescein glucosaminides s substrate for the rate-assay of)
IT 151230-94-3P 151230-95-4P 151230-96-5P 151230-97-6P
153753-49-2P 153753-50-5P 153753-51-6P 153753-52-7P
153753-53-8P 153753-54-9P 153753-55-0P 153753-56-1P 153753-57-2P
153753-58-3P 153753-59-4P 153831-52-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as substrate for the rate-assay of N-acetyl-.beta.-D-glucosaminidase)
IT 76-54-0, 2',7'-Dichlorofluorescein 105-36-2, Ethyl bromoacetate
540-51-2, 2-Bromoethanol 3587-60-8 4584-46-7 153831-53-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in prepn. of chlorofluorescein glucosaminides as substrate for the rate-assay of N-acetyl-.beta.-D-glucosaminidase)

L29 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:49284 CAPLUS
DOCUMENT NUMBER: 120:49284
TITLE: Photoactivable fluorophores for the measurement of fluence in turbid media
AUTHOR(S): Lilge, L.; Flotte, T. J.; Kochevar, I. E.; Jacques, S. J.; Hillenkamp, F.
CORPORATE SOURCE: Inst. Med. Phys., Westfael. Wilhelms Univ., Muenster, Germany
SOURCE: Photochemistry and Photobiology (1993), 58(1), 37-44
CODEN: PHCBAP; ISSN: 0031-8655
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Knowledge of the fluence distribution in biol. tissue is essential for applications of lasers and light in medicine. A method using a photoactivable fluorophore as a chem. actinometer is presented to investigate the fluence (J/cm2) distribution in tissue-simulating phantoms. Such a chem. actinometer provides high spatial resoln. (.ltoreq.20 .mu.m) while minimizing the disturbance of the fluence distribution. The actinometer substance, nonfluorescent in its native state, is incorporated into an acrylamide gel. Upon absorption of 351 nm radiation (.lambda.act), the actinometer substance becomes a fluorophore, which is excited at .lambda.ex .ltoreq. 485 nm. Thus the spatial distribution of the emitted fluorescence (.lambda.em .gtoreq. 515 nm) in the actinometer represents the fluence distribution of the activating radiation. Using histol. techniques, 20 .mu.m sections are cut from gel-like optical phantoms contg. the actinometric substance. The fluorescence intensity in the section is recorded under a std. fluorescence microscope equipped with a sensitive video camera. To stimulate different biol. tissues, the scattering and absorption properties of the gel phantoms are varied over a wide range. The exptl. obtained fluence distributions are compared with theor. models of light distribution in turbid media.
IT **111742-80-4 152238-54-5**
RL: ANST (Analytical study)
(in fluence detn. in turbid media by fluorometry, biol. tissue in relation to)
RN 111742-80-4 CAPLUS
CN Hexanoic acid, 6-[[6'-[(2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



RN 152238-54-5 CAPLUS
CN Hexanoic acid, 6-[(6'-hydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl)oxy]- (9CI) (CA INDEX NAME)



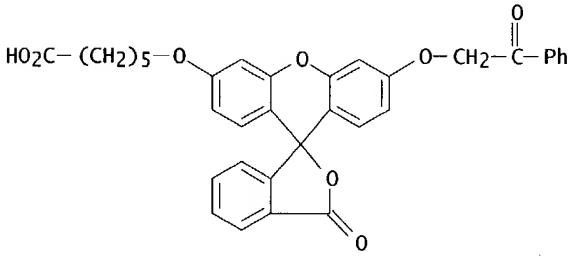
CC 9-5 (Biochemical Methods)
ST fluorophore actinometer fluence detn turbid medium; biol tissue fluence detn fluorophore
IT Fluorometry
(fluence detn. in turbid media by, with photoactivable fluorophores, biol. tissue in relation to)
IT Animal tissue
(fluence detn. in turbid media with photoactivable fluorophores in relation to)
IT Fluorescent substances
(photoactivable, as actinometer for fluence detn. in turbid media)
IT **111742-80-4 152238-54-5**
RL: ANST (Analytical study)
(in fluence detn. in turbid media by fluorometry, biol. tissue in relation to)

L29 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1988:23311 CAPLUS
DOCUMENT NUMBER: 108:23311
TITLE: Photoactivable fluorophores. 3. Synthesis and photoactivation of fluorogenic difunctionalized fluoresceins
AUTHOR(S): Krafft, Grant A.; Sutton, W. Randall; Cummings, Richard T.
CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244-1200, USA
SOURCE: Journal of the American Chemical Society (1988), 110(1), 301-3
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 108:23311
AB The synthesis and photoactivation of O,O'-difunctionalized fluorescein (I)-based photoactivable fluorophores (PAF) are described. Photoactivable fluorophores are specifically designed to be tracer mols. in studies of mol. transport and diffusion. I and 5-aminofluorescein are converted to differentially functionalized, non-fluorescent diethers in which one of the phenolic ethers consists of a photocleavable group. Photoactivation converts the non-fluorescent diethers to I monoethers that tautomerize to the highly fluorescent xanthen-3-one isomer. The synthesis of PAF mols.

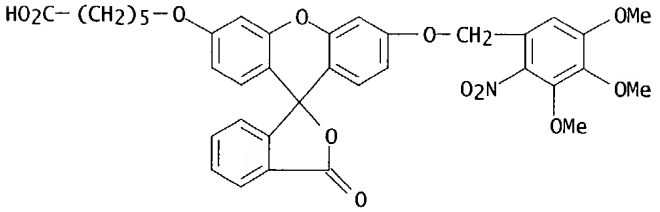
with polar functionality and covalent linking functionality is also described, and quantum yields for the photocleavage reactions of substituted o-nitrobenzyl and phenacyl ethers of I and haloacetamidofluoresceins are reported.

IT **111742-61-1P 111742-65-5P 111742-74-6P 111742-76-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and photoactivation of)

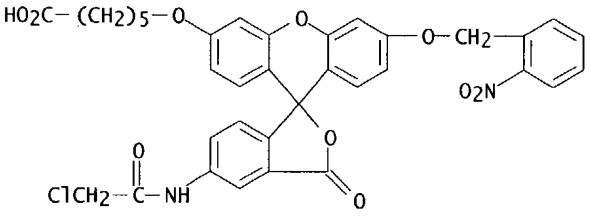
RN 111742-61-1 CAPLUS
CN Hexanoic acid, 6-[[3-oxo-6'-(2-oxo-2-phenylethoxy)spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



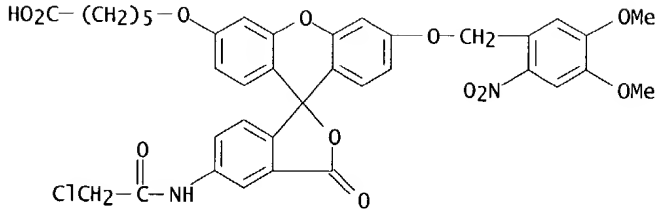
RN 111742-65-5 CAPLUS
CN Hexanoic acid, 6-[[3-oxo-6'-[(3,4,5-trimethoxy-2-nitrophenyl)methoxy]spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



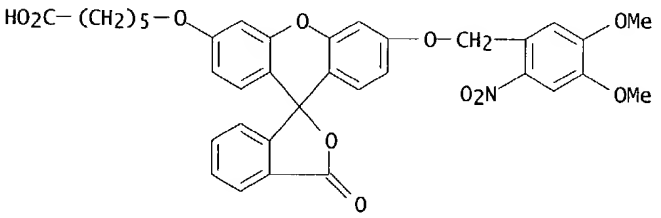
RN 111742-74-6 CAPLUS
CN Hexanoic acid, 6-[[5-[(chloroacetyl)amino]-6'-[(2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



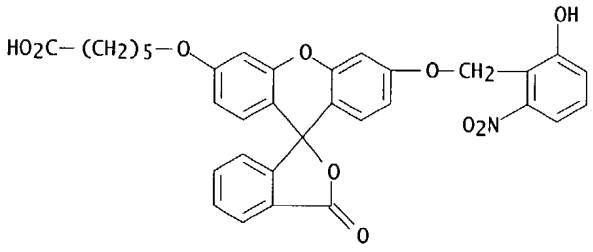
RN 111742-76-8 CAPLUS
CN Hexanoic acid, 6-[[5-[(chloroacetyl)amino]-6'-[(4,5-dimethoxy-2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



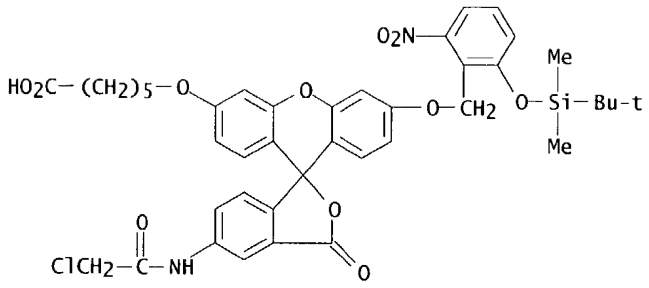
IT **111742-67-7P 111742-68-8P 111742-75-7P**
111742-77-9P 111742-78-0P 111742-79-1P
111742-80-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 111742-67-7 CAPLUS
CN Hexanoic acid, 6-[[6'-[(4,5-dimethoxy-2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



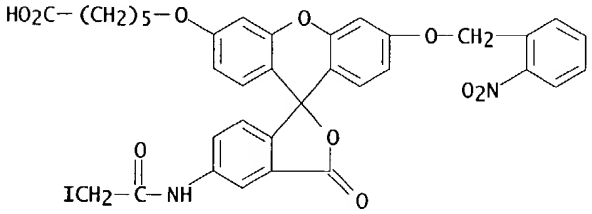
RN 111742-68-8 CAPLUS
CN Hexanoic acid, 6-[[6'-[(2-hydroxy-6-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



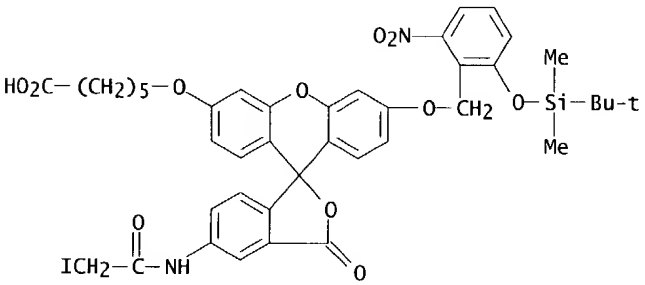
RN 111742-75-7 CAPLUS
CN Hexanoic acid, 6-[[5-[(chloroacetyl)amino]-6'-[[2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-nitrophenyl]methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



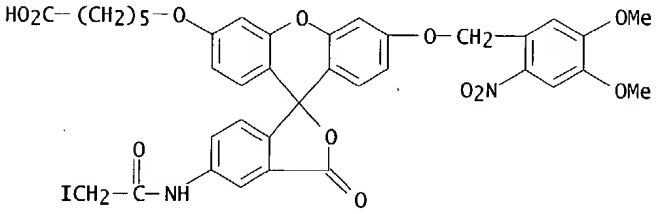
RN 111742-77-9 CAPLUS
CN Hexanoic acid, 6-[[5-[(iodoacetyl)amino]-6'-[(2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



RN 111742-78-0 CAPLUS
CN Hexanoic acid, 6-[[6'-[[2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-nitrophenyl]methoxy]-5-[(iodoacetyl)amino]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)

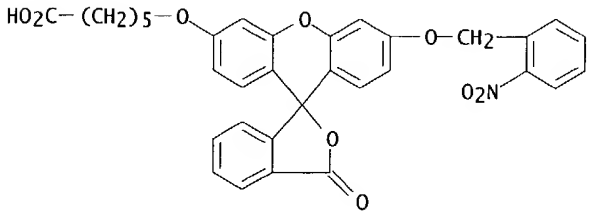


RN 111742-79-1 CAPLUS
CN Hexanoic acid, 6-[[6'-[(4,5-dimethoxy-2-nitrophenyl)methoxy]-5-[(iodoacetyl)amino]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



RN 111742-80-4 CAPLUS
CN Hexanoic acid, 6-[[6'-[(2-nitrophenyl)methoxy]-3-oxospiro[isobenzofuran-

1(3H),9'-[9H]xanthen]-3'-yl]oxy]- (9CI) (CA INDEX NAME)



CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
ST fluorescein photoactivation; fluorophore photoactivation
IT Dyes
(fluorescein derivs., synthesis and photoactivation of)
IT 77295-58-0 103483-32-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of aminofluorescein)
IT 4636-16-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of fluorescein)
IT 3958-60-9, o-Nitrobenzyl bromide 53413-67-5 103387-07-1 111742-62-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification by, of fluorescein deriv.)
IT 2321-07-5, Fluorescein 3326-34-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification of)
IT 111742-60-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(etherification of, by iodohexane deriv.)
IT 111742-70-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and benzylation of)
IT 111742-71-3P 111742-72-4P 111742-73-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and desilylation of)
IT **111742-61-1P 111742-65-5P 111742-74-6P**
111742-76-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and photoactivation of)
IT 111742-63-3P 111742-64-4P 111742-66-6P **111742-67-7P**
111742-68-8P 111742-69-9P **111742-75-7P**
111742-77-9P 111742-78-0P 111742-79-1P
111742-80-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 79-04-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminofluorescein)

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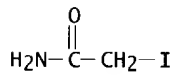
=> d que
L103      42468 SEA FILE=CAPLUS ABB=ON  PLU=ON  (DNA OR NUCLEIC)(10A)(CONJUGAT?
                OR LABEL? OR LINK?)
L105        823 SEA FILE=CAPLUS ABB=ON  PLU=ON  L103 (10A) (?AMID?)
L106        243 SEA FILE=CAPLUS ABB=ON  PLU=ON  L105 AND (CHROMO? OR FLUORO?
                OR FLUORE?)
L107        167 SEA FILE=CAPLUS ABB=ON  PLU=ON  L106 AND PY<2002
L129         66 SEA FILE=CAPLUS ABB=ON  PLU=ON  L107 AND 3
L130          1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L129 AND (SPECIFIC CHEMICAL
                LABELING)/TI
L131          6 SEA FILE=REGISTRY ABB=ON  PLU=ON  (31556-28-2/BI OR 144-48-9/BI
                OR 4145-46-4/BI OR 63296-31-1/BI OR 63368-54-7/BI OR 69414-31-
                9/BI)
L132          1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L130 AND L131


=> d ibib abs hitstr

L132 ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        1980:72269  CAPLUS
DOCUMENT NUMBER:         92:72269
TITLE:                   Specific chemical labeling
                         of DNA fragments
AUTHOR(S):               Eshaghpour, Hilbert; Soell, Dieter; Crothers, Donald
                         M.
CORPORATE SOURCE:        Dep. Chem., Yale Univ., New Haven, CT, 06520, USA
SOURCE:                  Nucleic Acids Research (1979), 7(6), 1485-95
                         CODEN: NARHAD; ISSN: 0305-1048
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   A method for the specific chem. labeling of DNA fragments at their
     3'-termini is described.  The procedure includes enzymic addn. of
     4-thiouridine, followed by reaction in mild nondenaturing conditions with
     .alpha.-haloacetamido derivs. of several chem. labels.  The attached
     reporter mol. can be removed by extended treatment with
     .beta.-mercaptoethanol.  Among the potential applications of this labeling
     method is the study of specific protein-DNA interactions in soln.
IT   144-48-9 63296-31-1 63368-54-7
     69414-31-9
     RL: ANST (Analytical study)
        (DNA fragment labeling with)
RN   144-48-9  CAPLUS
CN   Acetamide, 2-iodo- (8CI, 9CI)  (CA INDEX NAME)
```



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RN   63296-31-1  CAPLUS
CN   Acetamide, N-(4-azidophenyl)-2-bromo- (9CI)  (CA INDEX NAME)
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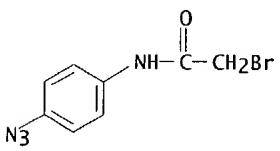
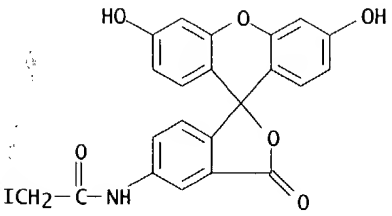
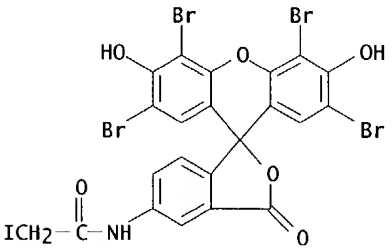


```
RN   63368-54-7  CAPLUS
CN   Acetamide, N-(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-
     [9H]xanthen]-5-yl)-2-iodo- (9CI)  (CA INDEX NAME)
```

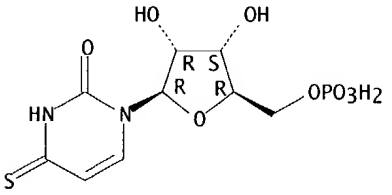


RN 69414-31-9 CAPLUS
CN Acetamide, 2-iodo-N-(2',4',5',7'-tetrabromo-3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)- (9CI) (CA INDEX NAME)



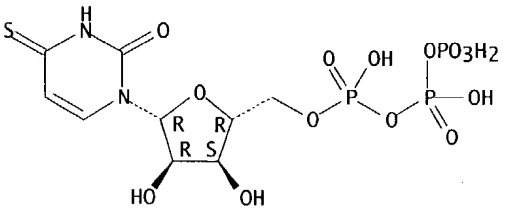
IT **4145-46-4D**, **iodoacetamide** adduct **31556-28-2D**, **iodoacetamide** adduct
RL: ANST (Analytical study)
(electrophoresis of, **DNA labeling** in relation to)
RN 4145-46-4 CAPLUS
CN 5'-Uridylic acid, 4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 31556-28-2 CAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 4-thio- (9CI) (CA INDEX NAME)

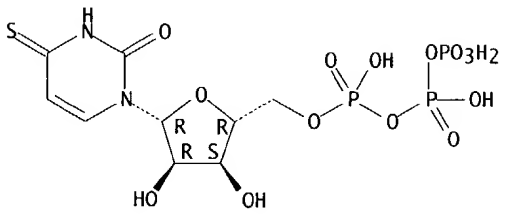
Absolute stereochemistry.



IT **31556-28-2P**
RL: PREP (Preparation)
(prepn. of, and enzymic reaction with DNA)

RN 31556-28-2 CAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

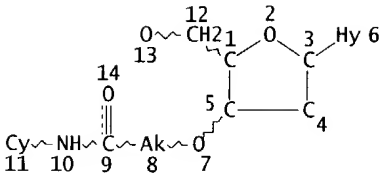


=> d ind

L132 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
CC 9-13 (Biochemical Methods)
ST DNA fragment chem labeling; **fluorescent** labeling DNA
IT Nucleotides, compounds
RL: ANST (Analytical study)
(electrophoresis of, DNA labeling in relation to)
IT Deoxyribonucleic acids
RL: ANST (Analytical study)
(labeling of fragments of, at 3'-termini, chem. and **fluorescent** compds. for)
IT **144-48-9 63296-31-1 63368-54-7 69414-31-9**
RL: ANST (Analytical study)
(DNA fragment labeling with)
IT **4145-46-4D, iodoacetamide** adduct **31556-28-2D, iodoacetamide** adduct
RL: ANST (Analytical study)
(electrophoresis of, **DNA labeling** in relation to)
IT **31556-28-2P**
RL: PREP (Preparation)
(prepn. of, and enzymic reaction with DNA)

=>

```
=> d que
L89              STR
```

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS M2 N  AT   6

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
L92              STR
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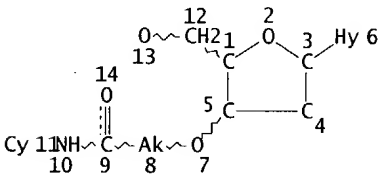


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CONNECT IS E2  RC AT   4
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS M4 C  M2 N  AT   6

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
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L96           1 SEA FILE=REGISTRY SUB=L94 SSS FUL L89
L97           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L96


=>
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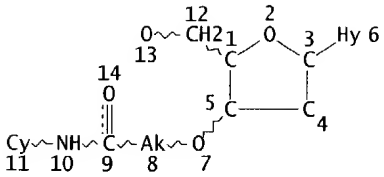
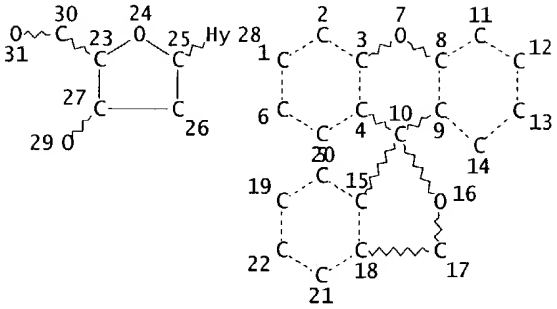
=> d que
L89 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M2 N AT 6

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
L99 STR



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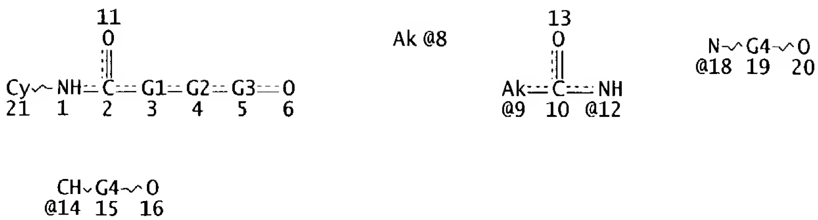
CONNECT IS E2 RC AT 29
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M2 N AT 28

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE
L101 178 SEA FILE=REGISTRY SSS FUL L99
L102 0 SEA FILE=REGISTRY SUB=L101 SSS FUL L89

=> d que
L17 STR



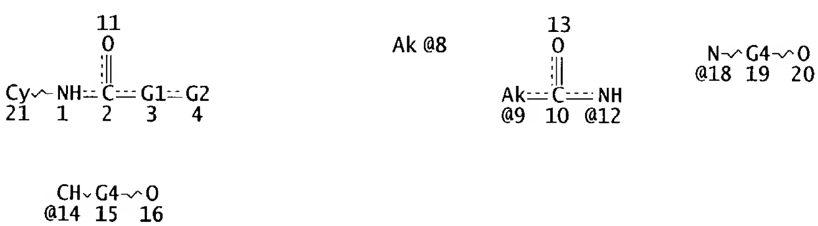
VAR G1=8/9-2 12-4
VAR G2=14/18
REP G3=(1-20) CH2
REP G4=(1-20) CH2
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 8
CONNECT IS E2 RC AT 9
DEFAULT MLEVEL IS ATOM
GGCAT IS LIN SAT AT 8
GGCAT IS LIN SAT AT 9
GGCAT IS UNS AT 21
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L60	12014	SEA FILE=REGISTRY	ABB=ON	PLU=ON	7938.12.8/RID
L68	388	SEA FILE=REGISTRY	ABB=ON	PLU=ON	11339.3.1/RID
L73	548001	SEA FILE=REGISTRY	ABB=ON	PLU=ON	591.49.57/RID
L75	3065	SEA FILE=REGISTRY	ABB=ON	PLU=ON	1894.54.14/RID
L76	563252	SEA FILE=REGISTRY	ABB=ON	PLU=ON	L75 OR L73 OR L60 OR L68

L79 STR



VAR G1=8/9-2 12-4
VAR G2=14/18
REP G4=(1-20) CH2
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS LIN SAT AT 8
GGCAT IS LIN SAT AT 9
GGCAT IS UNS AT 21
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

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L85 9 SEA FILE=REGISTRY SUB=L82 SSS FUL L17
L86 3 SEA FILE=CAPLUS ABB=ON PLU=ON L85

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=> d que
L1           32 SEA FILE=CAPLUS ABB=ON  PLU=ON  HEINDL D?/AU
L2          141 SEA FILE=CAPLUS ABB=ON  PLU=ON  SANGER G?/AU
L3           12 SEA FILE=CAPLUS ABB=ON  PLU=ON  MAERZ H?/AU
L4          304 SEA FILE=CAPLUS ABB=ON  PLU=ON  VON DER ELTZ?/AU
L5          483 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4)
L6           28 SEA FILE=CAPLUS ABB=ON  PLU=ON  L5 AND NUCLEIC
L7           13 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 AND LABEL?
L8            2 SEA FILE=CAPLUS ABB=ON  PLU=ON  L7 AND REAGENT/TI
L9           19 SEA FILE=REGISTRY ABB=ON  PLU=ON  (108-55-4/BI OR 150-25-4/BI
                OR 154928-39-9/BI OR 154928-40-2/BI OR 154928-41-3/BI OR
                2321-07-5/BI OR 321858-92-8/BI OR 3282-30-2/BI OR 3318-08-9/BI
                OR 403656-56-4/BI OR 403656-57-5/BI OR 403656-58-6/BI OR
                403656-59-7/BI OR 403656-60-0/BI OR 403656-61-1/BI OR 403656-62
                -2/BI OR 40615-36-9/BI OR 534-03-2/BI OR 82911-69-1/BI)
L10           2 SEA FILE=CAPLUS ABB=ON  PLU=ON  L8 AND L9


=> d ibib abs hitstr ind 1-2

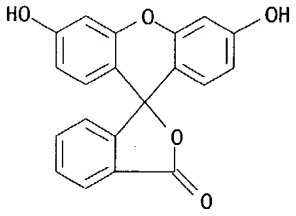
L10  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        2002:183792  CAPLUS
DOCUMENT NUMBER:         136:232506
TITLE:                   Labeling reagents that are stable
                         during the synthesis of labeled
                         nucleic acids
INVENTOR(S):             Heindl, Dieter; Sagner, Gregor; Maerz,
                         Heribert; Von der Eltz, Herbert
PATENT ASSIGNEE(S):      Roche Diagnostics Gmbh, Germany; F. Hoffmann-La Roche
                         Ag
SOURCE:                  Eur. Pat. Appl., 23 pp.
                         CODEN: EPXXDW
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     EP 1186613         A1   20020313       EP 2001-121139   20010904
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     DE 10044373        A1   20020321       DE 2000-10044373 20000908
     US 2002110691      A1   20020815       US 2001-943411   20010830
     JP 2003012951      A2   20030115       JP 2001-272569   20010907
PRIORITY APPLN. INFO.:                   DE 2000-10044373 A  20000908
OTHER SOURCE(S):          MARPAT 136:232506
AB   The present invention concerns a labeling reagent in which the
     label is bound via an amide bond and a linker to a residue of the
     mol. which is essentially characterized in that the N atom of the amide
     bond and the label are linked together directly by a covalent
     bond.  In particular, these are phosphoramidites or reactive supports
     suitable for nucleic acid synthesis, such that the label
     is not subjected to a strong electron-acceptor effect and remains stable
     during the oligonucleotide synthesis.  Such e=mols. contain a substituent
     having the structural element -CH2-CO-NH-M in which M denotes the
     detectable label such as a fluorescent dye, such as fluorescein
     which is optionally provided with protective groups.  The covalent amide
     linking ensures an adequately stable coupling fo the fluorescent dye
     during oligonucleotide synthesis and does not influence the spectral
     properties of the fluorescent dye compared to derivs. coupled with a
     thiourea linker.  The invention also concerns processes for the prodn. of
     such supports from suitable precursors.  Synthetic protocols are provided
     for the synthesis of (1) glutarylamino-bispivaloylfluorescein NHS ester
     contg. 1-methoxytrityloxy-3-hydroxy-2-aminopropane and (2)
     N-(2-hydroxyethyl)-N-(2-dimethoxytrityloxyethyl)-5-(2-amino-
     ethylcarboxamido)-bispivaloylfluorescein, and their use in
```

labeling during solid-phase **nucleic** acid synthesis.

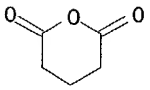
IT **2321-07-5**, Fluorescein
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)

RN 2321-07-5 CAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)

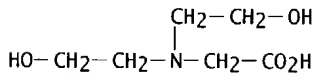


IT **108-55-4**, Glutaric anhydride **150-25-4**, Bicine
534-03-2, Serinol **3282-30-2**, Pivaloyl chloride
3318-08-9 40615-36-9 82911-69-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)

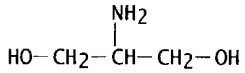
RN 108-55-4 CAPLUS
CN 2H-Pyran-2,6(3H)-dione, dihydro- (9CI) (CA INDEX NAME)



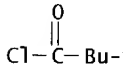
RN 150-25-4 CAPLUS
CN Glycine, N,N-bis(2-hydroxyethyl)- (6CI, 8CI, 9CI) (CA INDEX NAME)



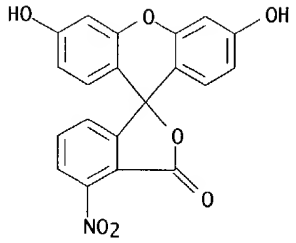
RN 534-03-2 CAPLUS
CN 1,3-Propanediol, 2-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



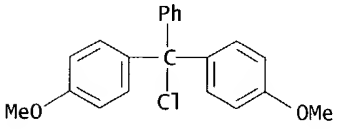
RN 3282-30-2 CAPLUS
CN Propanoyl chloride, 2,2-dimethyl- (9CI) (CA INDEX NAME)



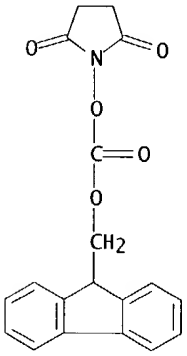
RN 3318-08-9 CAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-4-nitro- (9CI) (CA INDEX NAME)



RN 40615-36-9 CAPLUS
CN Benzene, 1,1'-(chlorophenylmethylene)bis[4-methoxy- (9CI) (CA INDEX NAME)

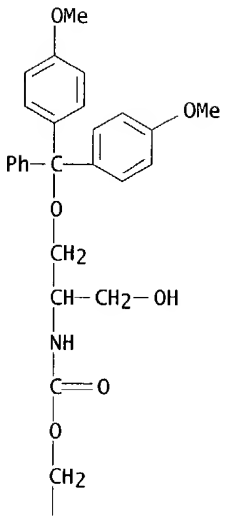


RN 82911-69-1 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[[(9H-fluoren-9-ylmethoxy)carbonyl]oxy]- (9CI) (CA INDEX NAME)

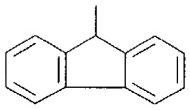


IT **154928-39-9P 154928-40-2P 154928-41-3P**
321858-92-8P 403656-56-4P 403656-57-5P
403656-58-6P 403656-59-7P 403656-60-0P
403656-61-1P 403656-62-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
RN 154928-39-9 CAPLUS
CN Carbamic acid, [2-[bis(4-methoxyphenyl)phenylmethoxy]-1-(hydroxymethyl)ethyl]-, 9H-fluoren-9-ylmethyl ester (9CI) (CA INDEX NAME)

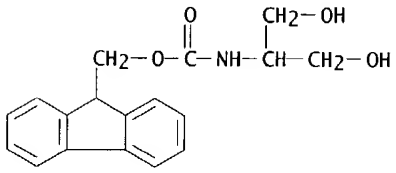
PAGE 1-A



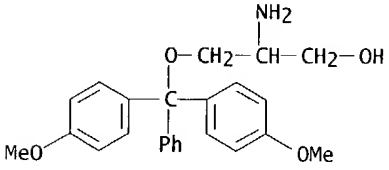
PAGE 2-A



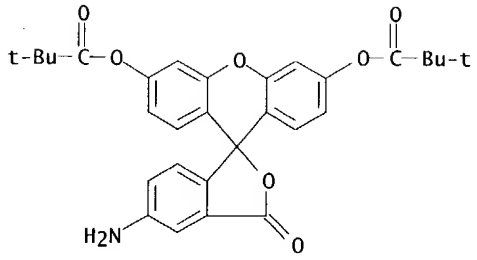
RN 154928-40-2 CAPLUS
CN Carbamic acid, [2-hydroxy-1-(hydroxymethyl)ethyl]-, 9H-fluoren-9-ylmethyl ester (9CI) (CA INDEX NAME)



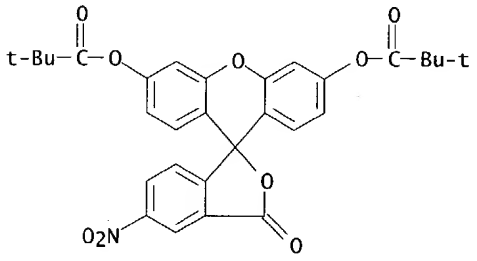
RN 154928-41-3 CAPLUS
CN 1-Propanol, 2-amino-3-[bis(4-methoxyphenyl)phenylmethoxy]- (9CI) (CA INDEX NAME)



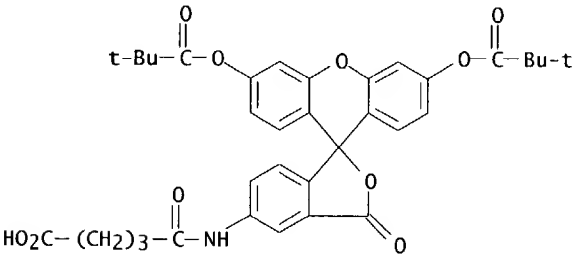
RN 321858-92-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-amino-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl ester (9CI) (CA INDEX NAME)



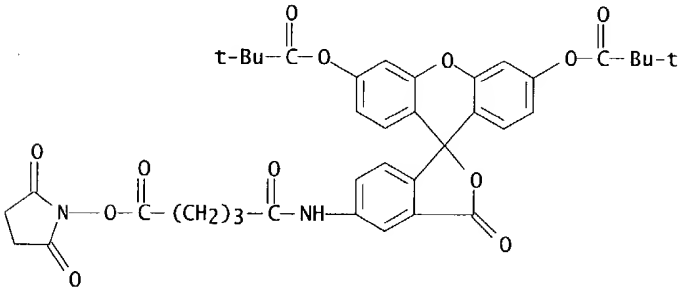
RN 403656-56-4 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-nitro-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl ester (9CI) (CA INDEX NAME)



RN 403656-57-5 CAPLUS
CN Pentanoic acid, 5-[[3',6'-bis(2,2-dimethyl-1-oxopropoxy)-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl]amino]-5-oxo- (9CI) (CA INDEX NAME)



RN 403656-58-6 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-[[5-[(2,5-dioxo-1-pyrrolidinyl)oxy]-1,5-dioxopentyl]amino]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl ester (9CI) (CA INDEX NAME)



RN 403656-59-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-[[5-[[2-[bis(4-methoxyphenyl)phenylmethoxy]-1-(hydroxymethyl)ethyl]amino]-1,5-dioxopentyl]amino]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl ester (9CI) (CA INDEX NAME)

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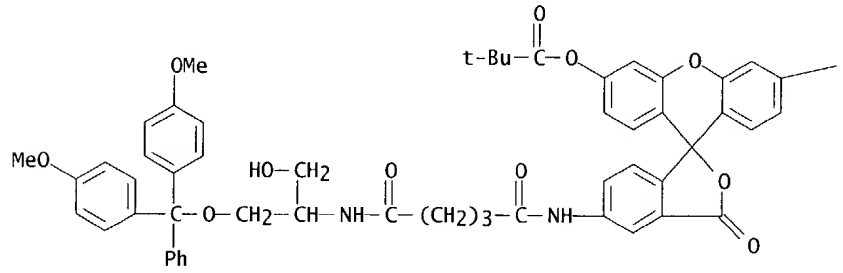
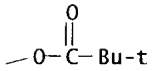


PAGE 1-B



RN 403656-60-0 CAPLUS
CN Butanedioic acid, mono[2-[[5-[[3',6'-bis(2,2-dimethyl-1-oxopropoxy)-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl]amino]-1,5-dioxopentyl]amino]-3-[bis(4-methoxyphenyl)phenylmethoxy]propyl] ester (9CI) (CA INDEX NAME)

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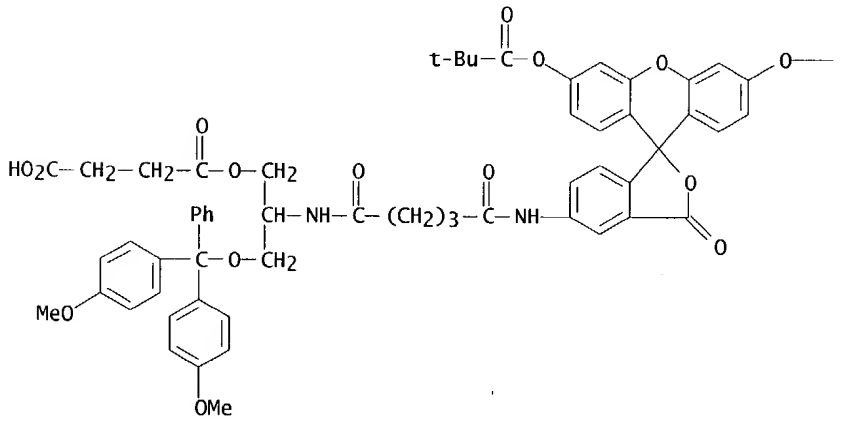
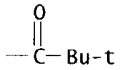
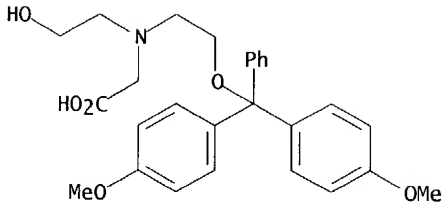


PAGE 1-B



RN 403656-61-1 CAPLUS
CN Glycine, N-[2-[bis(4-methoxyphenyl)phenylmethoxy]ethyl]-N-(2-hydroxyethyl)- (9CI) (CA INDEX NAME)



RN 403656-62-2 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-[[[[2-[bis(4-methoxyphenyl)phenylmethoxy]ethyl](2-hydroxyethyl)amino]acetyl]amino]-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl ester (9CI) (CA INDEX NAME)

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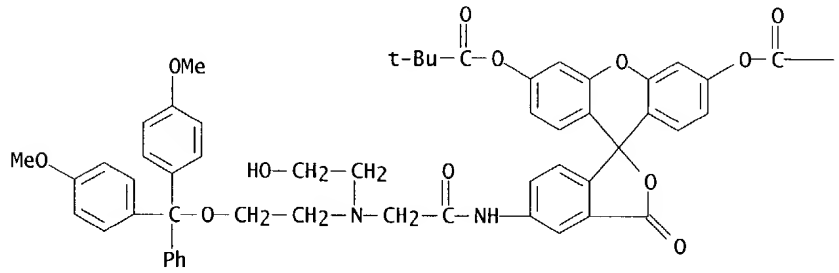

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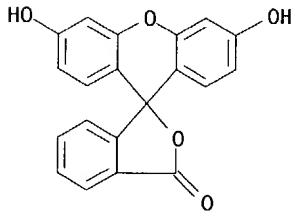
—Bu-t

IC ICM C07H021-00
CC 33-10 (Carbohydrates)
Section cross-reference(s): 3, 9
ST fluorescent dye **labeling** reagent **nucleic** acid synthesis; oligonucleotide synthesis fluorescein **labeling** reagent
IT Glass, reactions
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)
(controlled pore; **labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
IT Fluorescent dyes
Linking agents
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
IT Solid phase synthesis
(oligonucleotide; **labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
IT **2321-07-5**, Fluorescein
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
IT **108-55-4**, Glutaric anhydride **150-25-4**, Bicine **534-03-2**, Serinol **3282-30-2**, Pivaloyl chloride **3318-08-9 40615-36-9 82911-69-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)

IT **154928-39-9P 154928-40-2P 154928-41-3P**
321858-92-8P 403656-56-4P 403656-57-5P
403656-58-6P 403656-59-7P 403656-60-0P
403656-61-1P 403656-62-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**labeling** reagents that are stable during the synthesis of **labeled nucleic** acids)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:895011 CAPLUS
DOCUMENT NUMBER: 136:380789
TITLE: **Labeling** hybridization probes for LightCycler applications: A complete set of **labeling reagents** now available
AUTHOR(S): **Heindl, Dieter**; Huber, Andreas; Marz, Heribert
CORPORATE SOURCE: Roche Molecular Biochemicals, Penzberg, Germany
SOURCE: Biochemica (2001), (1), 7-8
CODEN: BIOCFE; ISSN: 0946-1310
PUBLISHER: Roche Molecular Biochemicals
DOCUMENT TYPE: Journal
LANGUAGE: English
AB LightCycler-Fluorescein CPG which is a new type of CPG material specially optimized for LightCycler applications, simplifies synthesis and purifn. of fluorescein **labeled** Hybridization Probes. Together with LightCycler-Red 640 and LightCycler-Red 705 dyes, all **labeling** reagents for oligonucleotides involved in the Hybridization Probe format are now available from Roche Mol. Biochems. The spectral characteristics provide an optimized FRET process with a min. of crosstalk effects. The emission spectra of Hybridization Probes **labeled** with these LightCycler System dyes is shown.
IT **2321-07-5**, Fluorescein
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(in LightCycler controlled pore glass; oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
RN 2321-07-5 CAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



CC 3-1 (Biochemical Genetics)
ST oligonucleotide fluorometry LightCycler dye hybridization probe
IT Probes (**nucleic** acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(LightCycler fluorescence probes; oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
IT Named reagents and solutions
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(LightCycler; oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
IT Glass, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(controlled pore, LightCycler-fluorescein CPG; oligonucleotide detection with fluorescent hybridization probes for LightCycler

applications)
IT Fluorescence resonance energy transfer
Fluorometry
PCR (polymerase chain reaction)
(oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
IT Oligonucleotides
RL: ANT (Analyte); ANST (Analytical study)
(oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
IT **2321-07-5**, Fluorescein
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(in LightCycler controlled pore glass; oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
IT 245670-26-2, LightCycler-Red 640 251949-03-8, LightCycler-Red 705
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide detection with fluorescent hybridization probes for LightCycler applications)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT